

PNW768

A **PACIFIC NORTHWEST EXTENSION** PUBLICATION
UNIVERSITY OF IDAHO • OREGON STATE UNIVERSITY • WASHINGTON STATE UNIVERSITY

Market Poultry Lesson Plans

FROM EGG TO ANIMAL



**PACIFIC NORTHWEST
EXTENSION PUBLISHING**

IDAHO • OREGON • WASHINGTON

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Introduction

The 4-H Poultry Science Lesson plans are designed to help provide more focus on poultry science education for youth. The materials are intended for 4-H members participating in Poultry projects to have a learning experience through research-based materials and hands-on activities.

An objective of the Poultry Science Lesson plans is to guide the educational experience of youth raising poultry as well as provide an outline for adult volunteers. The lessons include all the information and resources needed for volunteers to prepare and teach at 4-H club meetings.

Youth and parents have the ability to access the lesson plans with all the information needed to successfully complete. Youth are also encouraged to use the lessons as a 4-H demonstration. This will engage the youth in teaching other youth. Each lesson plan describes the goal for that lesson and was written following the experiential learning model. The hands-on activity included in the lesson is intended for the member to be more engaged in the learning.

These lessons when accompanied with preparation and teaching will increase the knowledge of the youth member. It is recommended that the presenter read and understand what is being taught through each plan, prepare the activity as outlined and practice so the educational experience for the youth participants is of the highest quality.

FINANCIAL RECORDKEEPING





Where Is My Money Going?

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Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will recognize the importance of financial recordkeeping in their market projects. Youth will be able to apply their skills toward creating a budget.

Supplies

- One bag of dry beans
- Enough copies of the activity pages of *The Bean Game: Living on a “20 Bean Salary”* for each group or individual
- One copy of the attached instruction page for *The Bean Game: Living on a “20 Bean Salary”* for facilitator
- Copy of the *4-H Market Broiler* or *Market Turkey Record Book*

Pre-Lesson Preparation

- Obtain current prices for feeds (grains and hay) that members might choose by visiting local feed stores.
- Secure realistic purchase and sale prices youth might expect for this project. (Visit with your local 4-H Professional for suggestions.)

Lesson Directions and Outline

Proper financial recordkeeping is an essential part of a successful market animal project. This lesson will help youth understand the importance of budgeting and money management in their projects.

Ask the group if they have ever gotten an allowance or if they have received money before. What did they spend it on? Was that a good use of money? What would they have done if they also had to pay for food, water, or electricity?

When you complete a market project, every dollar counts. Costs for feed, equipment, and medicine add up quickly. Without good recordkeeping, you can overspend and end up with a loss instead of profit on sale day.

Conducting the Activity (DO)

Part A (~20 minutes)

1. Split youth into partners and give each group a copy of *The Bean Game: Living on a “20 Bean Salary.”* Give each group 22 beans. Read each round of instructions. After finishing round 2’s discussion, read each of the prompts under “OTHER CHOICES” and let youth adjust their beans accordingly.

Part B (~15 minutes)

1. Show youth the financial recordkeeping documents in their respective turkey or market broiler 4-H record books. Help them understand each sheet’s purpose.
2. Emphasize the need to keep clear and accurate recordkeeping to have a successful project that breaks even.

What Did We Learn? (REFLECT)

- What did you learn during this activity?
- Was it hard to arrange your beans to fit your needs when unexpected things happened?
- Did you find it difficult to work with a partner if you had one? Why?

Why Is That Important? (APPLY)

- Why is it important to keep a budget?
- Can budgets change or are they set in stone?
- How can you use a budget to make sure you break even when you sell your animals? What does “break even” mean?
- Even with a budget, why is it important to keep track of your money and spending in your record books?

Resources

Darrington, Jana. *The Bean Game: Living on a “20 Bean Salary.”* Utah State University Extension. https://www.extension.iastate.edu/4h/files/page/files/bean_game.pdf.

THE BEAN GAME

Living on a "20 Bean Salary"

Recreated and Reproduced by
Jana Darrington, M.S.
Family and Consumer Science Agent
Utah State University Extension, Utah County



Game Instructions

Purpose

Managing money means making choices. There is never enough money available for all of the things we'd like to have or do. This game will help you decide what is most important to you.

How to Play

This game may be played individually, but optimum results come from playing in a group of 2 or more. Divide participants into groups of at least 2 and not more than 5. Each individual/group receives 20 beans and a set of spending category sheets. The individual/group must decide how to spend their "income" based on life circumstances, values and goals. Each item has a set number of squares which indicates how many beans are needed to "pay" for that item.

ROUND #1

First, each individual/group must select one item in each of the categories with the gold stars (Food, Housing, Furnishings, Transportation, Insurance and Clothing & Laundry). Once you have finished selecting items in the required categories, continue selecting items until you have used up your 20 bean income.

DISCUSSION QUESTIONS

Why did you choose the items you did? In what ways were you influenced by your values? Your goals? Your previous experiences? Compare what you spent your beans on with another individual/group.

ROUND #2

Your income has just been cut to 13 beans. What will you give up? What changes will you make? Make changes until you only have 13 beans on your spending sheets.

DISCUSSION QUESTIONS

What kinds of items did you choose to give up? Why? What did you learn about yourself and money in this process? Compare your budget-cutting choices with another individual/group.

OTHER CHOICES you may have to make...

- 1) Someone in the family just broke their leg. If you have insurance, you don't need to do anything. If you don't, take off 3 beans.
- 2) Your mom or dad just got a 2 bean raise! Decide where it should be spent.

Resources:

Parker, L. (n.d.). *The Bean Game*. Washington State University Extension, Family Resource Management Specialist.

Office of State Treasurer John Perdue. (n.d.). *The Budget Game: Living on a 20 Square Salary*. Financial Education Programs, Charleston, WV. Retrieved October 26, 2008 from <http://www.wvtreasury.com>.

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Housing with Utilities



live with relatives sharing cost of utilities (no phone)

share an apartment or house with others, including basic utilities (no phone)

rent place of your own, including basic utilities (no phone)

Communications



No phone

No cost

Phone with limited long distance calls

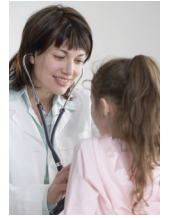
Phone with many long distance calls

Cell phone



High-speed Internet

Insurance



Auto

Liability coverage only

Complete coverage

Health and Disability

No coverage

No Cost

Fringe benefits of job

Basic health coverage

Individual health & disability coverage

Renters

Property and liability coverage

Gifts

Make your own



Purchase cards or small gifts occasionally

Purchase frequent gifts for family and friends

Savings



Change in piggy bank

No cost

Five percent of income

Ten percent of income

Invest for retirement

Contribution to charities and religious groups

Furnishings



Borrow from relatives or friends

No cost

Rent furniture or live in furnished apartment

Buy at a garage sale or thrift shop

Buy new furniture

★ Gold Star denotes Required Category



Recreation



Hiking, walking, visiting friends or library	No cost		
TV, snacks, picnics, driving around	<input type="checkbox"/>		
Cable TV, sports and movies	<input type="checkbox"/>	<input type="checkbox"/>	
Fishing, hunting, hobbies	<input type="checkbox"/>	<input type="checkbox"/>	
CDs/music, books, DVDs	<input type="checkbox"/>	<input type="checkbox"/>	
Concerts, vacations & spectator sports	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Personal care



Basic products like soap, shampoo, toothpaste, make-up, etc.	<input type="checkbox"/>		
Occasional professional haircuts, basic personal care products	<input type="checkbox"/>	<input type="checkbox"/>	
Regular professional hairstyling, name brand personal care products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Clothing & Laundry



Clothing

Wear present wardrobe	No Cost		
Use your sewing skills	<input type="checkbox"/>		
Buy at a discount store, thrift shop, or used clothing store	<input type="checkbox"/>		
Buy at a department store	<input type="checkbox"/>	<input type="checkbox"/>	
Shop for designer clothes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Laundry

Do laundry at parents	No Cost		
Use Laundromat; some dry cleaning	<input type="checkbox"/>		
Rent or purchase washer or dryer	<input type="checkbox"/>		

Food



Cook at home; dinner out once a week	<input type="checkbox"/>	<input type="checkbox"/>		
Frequent fast food lunches and weekly dinner out; cook other meals at home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
All meals away from home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Transportation



Walk or bike	No cost			
Ride bus or join a carpool	<input type="checkbox"/>			
Buy fuel for family car	<input type="checkbox"/>	<input type="checkbox"/>		
Buy used car and fuel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Buy new car and fuel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

More choices

Books or other items purchased on installment plan	<input type="checkbox"/>	
Newspaper and magazine subscriptions	<input type="checkbox"/>	
New TV, DVD player or iPod	<input type="checkbox"/>	<input type="checkbox"/>

★ Gold Star denotes Required Category

FACILITIES & MANAGEMENT

2



Getting Started

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Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will learn the necessary facilities, equipment, and sanitization measures to successfully raise a healthy market flock.

Supplies

- Masking tape
- Pencils - enough for group
- Enough copies for group of the *4-H Livestock Project Planning Worksheet* (Handout 1)
- Papers and cards of the *Cleaning and Sanitation Activity* (Handout 2)

Pre-Lesson Preparation

- Review the *4-H Livestock Project Planning Worksheet* (Handout 1) to become familiar with poultry brooders, coops, and poultry requirements.
- Cut out the cards containing the steps and equipment for the *Cleaning and Sanitation Activity* (Handout 2).

Lesson Directions and Outline

Ask the group, “Have you ever gone to school without your backpack or supplies? Was it difficult to complete tasks at school without your backpack or supplies that day?” Once everyone answers, say that raising market poultry is just like going to school; you need to have all the necessary supplies to be successful.

This livestock lesson provides youth with the necessary information to start brooding their poultry and to start building a coop when their poultry outgrow brooder care.

Conducting the Activity (DO)

Part A (~20–30 minutes)

1. Have members complete the *4-H Livestock Project Planning Worksheet* (Handout 1). Walk them through each section of the worksheet and have youth take turns reading the paragraphs. Note: If youth are struggling to answer worksheet questions, give them hints or encourage them to work with others in the group.
2. Have each person show their dream coop design to the group and discuss why they chose those features.
3. Emphasize at the end that even though everyone’s brooder and coop look different, they all must have food, water, bedding, heat, etc. to be successful and to raise a healthy flock.

Part B (~10 minutes)

1. Introduce the *Cleaning and Sanitation Activity* (Handout 2). Tape the step papers on the wall in numerical order. Give the group the shuffled cut-out cards with the steps and equipment. Give the youth 5 minutes to put each card under the step where they think it goes without providing hints.
2. After the 5 minutes are up, check which ones the youth got correct and move the incorrect ones to where they belong; be sure to explain why. Ask the reflection questions on the *Cleaning and Sanitation Activity* (Handout 2).
3. Be sure to emphasize the need for sanitation and clean facilities for the safety of the poultry and the youth.

What Did We Learn? (REFLECT)

- What did you learn while doing these activities?
- What things do you need to get to make sure your birds are healthy and happy?

Why Is That Important? (APPLY)

- Why do you think planning is the key to a successful project?
- Where else do you think you will use planning skills?

Resources

Best Nest Box. 2015. "How to Clean and Disinfect Your Chicken Coops for Spring." Best Nest Box. bestnestbox.com/blogs/news/how-to-clean-and-disinfect-your-chicken-coops-for-spring#:~:text=Use%20a%20natural%20cleaning%20agent,properties%20without%20the%20harsh%20effects. Omlet. 2021. "Different Types Of Chicken Coops." Omlet. www.omlet.co.uk/guide/chickens/choosing_your_chicken_coop/different_types_of_chicken_coops.

Enos, H. L. 1979. "Brooding and Space Requirements for Poultry." Colorado State University Extension. extension.colostate.edu/topic-areas/agriculture/brooding-and-space-requirements-for-poultry-2-502/.

Laatsch, David. 2019. "Raising Broilers and Roasters as 4-H and FFA Projects." La Crosse County Extension. 14 p. <https://lacrosse.extension.wisc.edu/files/2019/07/Raising-Roasters-and-Broilers.pdf>.

Miller, Carrie. 2019. "Coop Cleaning 101." Community Chickens. www.communitychickens.com/coop-cleaning-101/.

Timber Creek Farm. 2021. "6 Easy Brooder Ideas to Start Chicks." Timber Creek Farm. timbercreekfarmer.com/6-easy-brooder-ideas/.

4-H Livestock Project Planning Worksheet

This worksheet will help members and parents determine which costs, equipment, and facilities they will need to successfully complete a 4-H market poultry project. Learning this information before purchasing a flock of poultry will ensure member success and proper animal health.

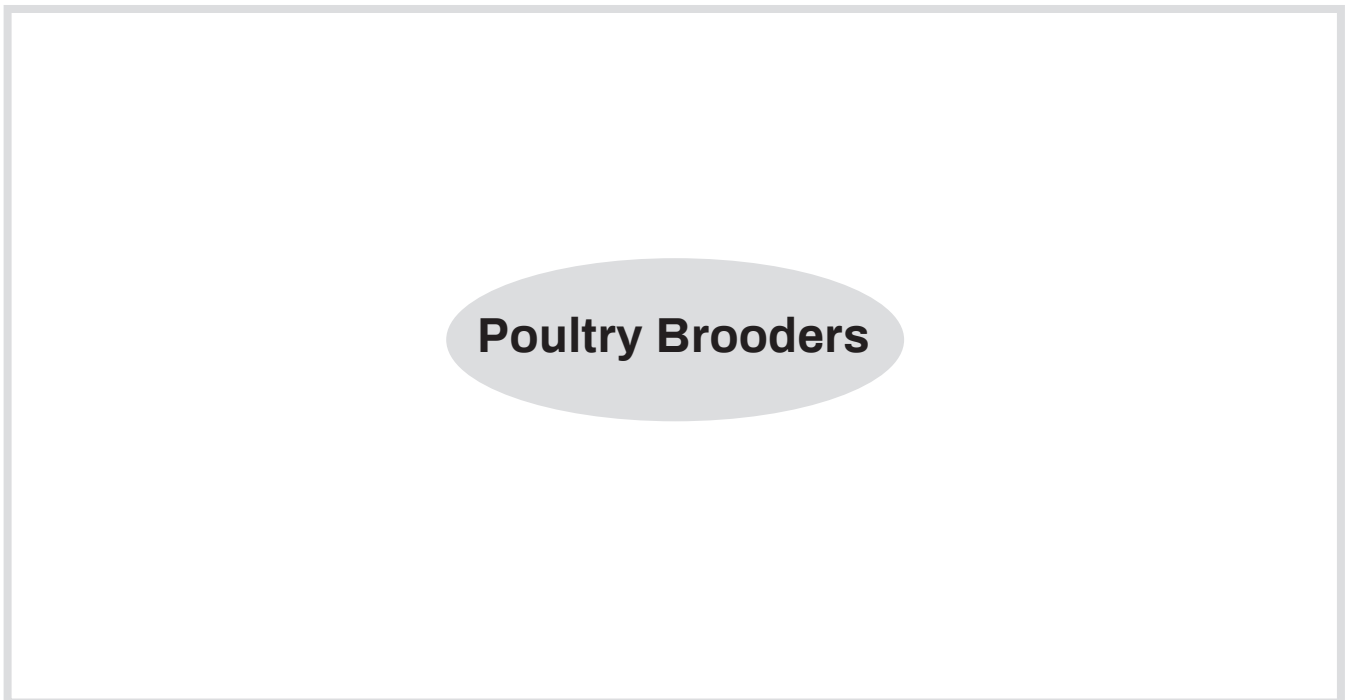
General Information

1. Which type of poultry do you want to raise? _____
2. Have you read the requirements and expectations for this project? Yes No
3. How much time will you spend a day on this project? _____
4. How much money do you want to invest in this project? _____
5. Where will your money come from? _____

Brooding Your Birds

Once you get your birds at either your county Extension office, your local farm supply store, or the breeder, you'll need a few things to get them settled. Artificial brooders are used to mimic what the hen would do to raise her chicks/poults.

Brooders can be made from just about anything: storage tubs, cardboard boxes, water troughs, even dry swimming pools! You can be creative when making a safe place for your chicks/poults, but every brooder has similar characteristics that let poultry thrive. Use the space below to brainstorm a spider web of what your brooder will need to keep your birds safe and healthy as they grow.



Poultry Brooders

Housing Your Birds

Pretty soon your poultry will be too big for the brooder and will be trying to fly out! Once they have most of their feathers grown in or there's no space left, you'll have to move them outside. Coops are what we call homes for poultry. They typically are a house or shelter for the poultry equipped with nesting boxes to lay eggs in and roosting sticks to sleep on. Water and feed are held in dispensers or troughs that allow the poultry to eat or drink whenever they want. They usually have a run so the poultry can leave their house and enjoy some time outside.

Coops can be made from many things, but wood and plastic are two of the most common. Plastic coops are not as sturdy as wooden coops, but mites and lice can't hide in the cracks of a plastic coop. There are also two main types of coops: stationary and mobile. Stationary coops are permanent, but mobile coops are on wheels and can be easily moved. Look at the pictures below and decide whether they're stationary or mobile. Then, list some pros and cons of each coop type on the next page.



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(Circle one) Stationary or Mobile



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(Circle one) Stationary or Mobile



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(Circle one) Stationary or Mobile



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(Circle one) Stationary or Mobile

Stationary Coops

Pros

Cons

Mobile Coops

Pros

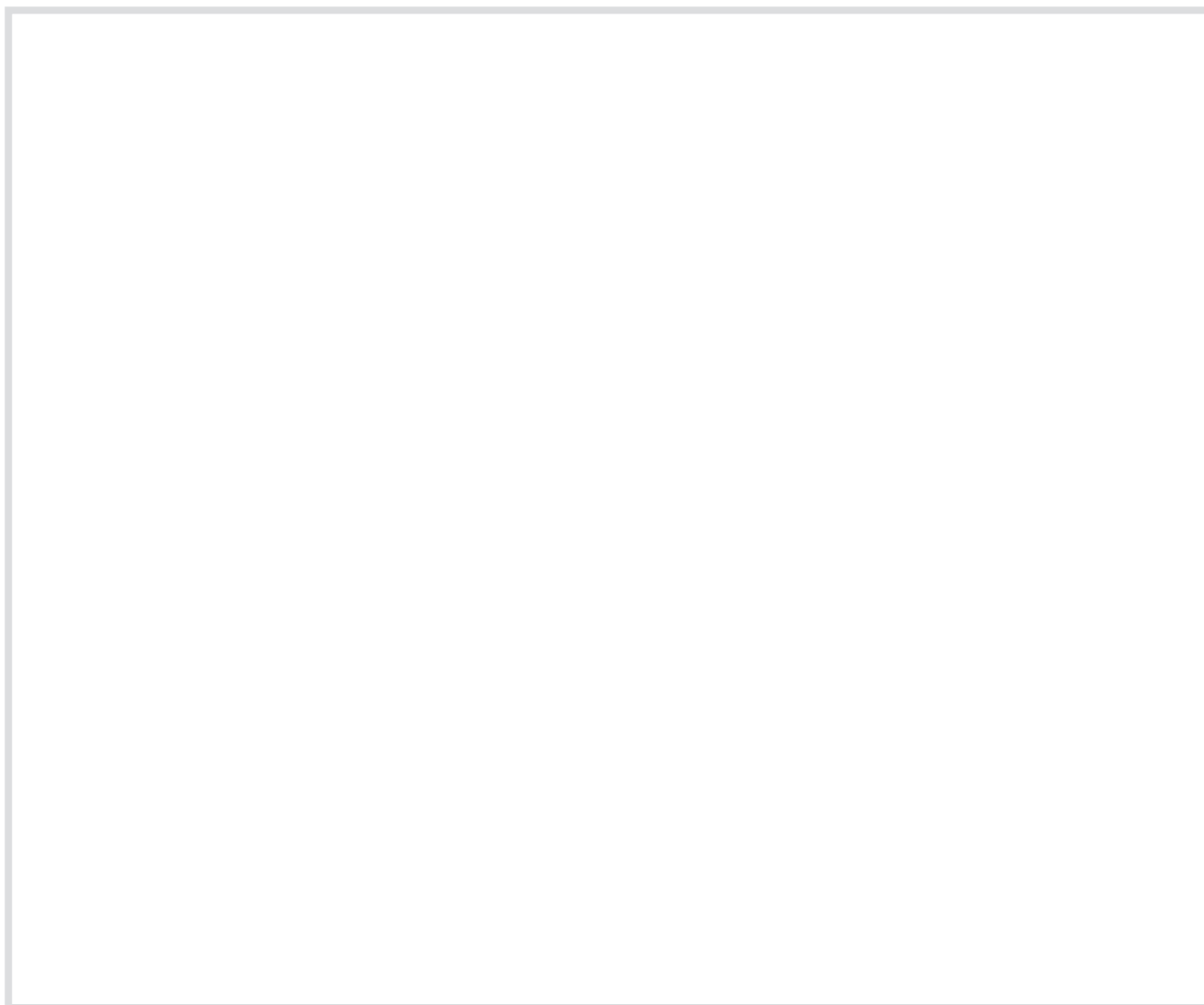
Cons

Designing Your Coop

Every coop is different. Some may be aboveground; some may be on the ground. Regardless of what your friend's facilities may look like, your coop will work as long as it provides for your poultry's basic needs.

It is also very important that it provides enough space to prevent pecking and stress. Male turkeys (toms) require at least 5 square feet and female turkeys (hens) require at least 3 square feet each. Chickens require less space at 2–3 feet per bird.

Use the space below to design your dream poultry coop. Keep in mind the space requirements for each of your birds, how you will clean the coop, how you will feed and water them, and how you will provide heat and/or ventilation. To exercise your birds, try putting the feeder and waterer on opposite sides of the coop.

A large, empty rectangular box with a thin gray border, intended for the student to draw and design their dream poultry coop. The box occupies most of the lower half of the page.



Cleaning and Sanitation Activity (Handout 2)

Goal

Youth will understand the importance of a clean coop.

Directions

1. Cut out the step description and equipment cards.
2. Tape the “Step X” papers on the wall in numerical order from left to right, leaving enough space for the other cards.
3. Hand the group of students the shuffled cards with some masking tape.
4. Youth will have 5 minutes to talk among themselves and decide where to put the step descriptions and equipment cards under the proper step.
5. After the 5 minutes have passed, rearrange any misplaced cards and explain why the card goes there.

Reflection

- What did you think of this activity?
- Why is it so important to keep the coop clean?
To prevent respiratory and bacterial illnesses.
- Why do we use diatomaceous earth in the nesting boxes?
To kill mites and lice.
- Why do we need to take precautions when cleaning the coop?
Keep birds and you healthy.
- How often should we clean the coop?
Every week.
- How often should we clean the waterer and feeder?
Every day.

Testis

step 2

3
p
te
s

step 4

50
p
te
s

estep

1 step

Mask

Gloves

Boots

**Safety
Glasses**

Rake

Shovel

**Hard
Brush**

Sprayer

**Wood
Shavings**

Buckets

**Pressure
Washer**

**Vinegar and
Water
1:1**

Diatomaceous Earth

Remove chickens,
eggs, waterers, and
feeders from coop

Protecting Yourself

Scrape poop from
nesting boxes, walls,
and ground

Put poop, feathers,
and used bedding in
bucket

Disinfect coop

Rinse coop
with water

Replace
bedding



Answers to Worksheet and Activity

Livestock Planning Worksheet

Poultry Brooders

- Heat lamp
- Waterer with clean, constant water supply
- Feeder with constant food supply
- Dry bedding (shavings, paper, etc.)
- A place to escape the heat lamp light
- Chicken wire cover on the brooder
- Ventilation
- Thermometer
- Scale for weighing

Types of Coops

- Top left – stationary
- Top right – mobile
- Bottom left – mobile
- Bottom right – stationary

Pros and Cons of Each Coop

Stationary Coops

Pros—Can be raised above the ground, more spacious, easily expandable, sturdier

Cons—Need to be cleaned frequently, don't move easily

Mobile Coops

Pros—Easiest to clean, can fertilize the lawn, easy to move, sometimes collapsible

Cons—Requires constant attention, not very sturdy, not very spacious

Sanitation Activity

Step 1

- Protecting Yourself
- Mask
- Boots
- Gloves
- Safety Glasses

Step 2

- Remove chickens, eggs, waterers, and feeders from the coop

Step 3

- Scrape poop from nesting boxes, walls, and ground
- Rake

Step 4

- Put poop, feathers, and used bedding in bucket
- Shovel
- Buckets

Step 5

- Rinse coop with water
- Hard brush
- Pressure Washer

Step 6

- Disinfect coop
- Sprayer
- Vinegar and Water 1:1

Step 7

- Replace bedding
- Wood Shavings
- Diatomaceous Earth

ANATOMY & PHYSIOLOGY

3



What's This Part Again?

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Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will be able to identify the external body parts of poultry. Youth will also explore the internal organ systems of poultry and understand their primary functions within the body.

Supplies

- Enough copies for the group of *Systems and Parts of Market Poultry* (Handout 1)
- Pencils - enough for the group
- Cut and shuffled set of *Chicken Anatomy Cards* or *Turkey Anatomy Cards*
- Two live chickens and/or turkeys
- Three tables
- Cowbell

Pre-Lesson Preparation

- Review the *Systems and Parts of Market Poultry* (Handout 1) to become familiar with the systems and parts of poultry.

Lesson Directions and Outline

Cars have many essential parts to ensure that they work properly. Motors, gears, and even the radio all need to work together to help you get to your destination.

Living things are very similar to cars, minus the bolts and gears. The basic unit of life is a cell, and cells work together to build tissues. Tissues then form organs and eventually entire organ systems, which are specialized for tasks like digestion or movement. If one fails, the rest of the body does, too.

The anatomy and physiology of an animal, or the structure and function, are unique to its species. There are even big differences between chickens and turkeys! Despite this, it's very important to know the anatomy of your birds for times when you might need to give emergency medical care or to communicate where an injury is. In this lesson you will learn the external anatomy of poultry and the functions of the poultry organ systems.

Conducting the Activity (DO)

Part A (~10–15 minutes)

1. Give each member a copy of *Systems and Parts of Market Poultry* (Handout 1). Have the youth take turns reading paragraphs and help them complete the associated worksheet.

Part B (~20–30 minutes)

1. Split the group into two teams, each on opposite sides of the room. Put a table in the back of the room and two at the front of the room quite a distance from the back table. Assign two leaders or senior members to be the poultry handlers at the front tables and give them a poultry diagram for reference. Youth are not allowed to have their worksheets for this part of the lesson plan.
2. Explain the rules of the game to the youth: *Each team will form a line. The leader will shuffle the cards and will randomly place one card on each side of the table before every round. Each person in front of the line will grab a card when the leader yells "Go!" The card has a poultry body part that the youth will try to point to on the bird at the front of the room (some body parts*

may not be there depending on the bird's sex, so have the student point to where it should be). The student will ring the bell on the back table once the handler says they have correctly identified the body part. Running is only okay if the poultry are well handled; if not, speed walk so that the birds aren't startled. Whoever rings the bell first scores a point for their team. The team with the highest tally at the end wins.

3. Play until each youth has participated at least three times.

What Did We Learn? (REFLECT)

- What did you learn while doing these activities? What did you like most?
- Does it surprise you how many body systems and parts there are?
- Why do some birds have specific body parts that others don't, such as spurs or sickle feathers?

Why Is That Important? (APPLY)

- Why is it important to know the parts of your animal?
- What could happen if one of the body systems you learned about gets damaged, such as the respiratory system?
- Where else do you think it might be important to know the parts of something?

Resources

EGyanKosh. n.d. "Lesson 4: Poultry Body Systems and Functions." IGNOU-SWAYAM Course Content/Introduction to Poultry Farming/e-Content. <https://egyankosh.ac.in/bitstream/123456789/59734/1/Poultry%20body%20systems%20and%20functions.pdf>.

Poultry Hub Australia. 2021. "Body Systems." Poultry Hub Australia. <https://www.poultryhub.org/anatomy-and-physiology/body-systems>.

University of Kentucky Ag Extension. n.d. "Chapter 3: Chicken Anatomy and Physiology."

Poultry Anatomy and Physiology: What's This Part Again - Handout 1

Member Name: _____

Systems and Parts of Market Poultry

Every living thing is made of millions of cells, the tiniest building block of life. These cells reproduce and work together to make tissues, then organs, then organ systems, and finally an organism! Just like you, your birds have groups of organs called a system that work together to make sure that the body functions properly. Each of these systems has a specific function, from digesting food to supporting the body's structure, that makes sure the bird can carry out everyday life.

The main systems of the body are the Circulatory System, the Digestive System, the Endocrine System, the Excretory System, the Immune System, the Muscular System, the Nervous System, the Reproductive System, the Respiratory System, and the Skeletal System.

Work together in partners or groups to match the systems to their function. Ask the leader for help if you need it.

1. _____ Circulatory System

2. _____ Digestive System

3. _____ Endocrine System

4. _____ Excretory System

5. _____ Immune System

6. _____ Muscular System

7. _____ Nervous System

8. _____ Reproductive System

9. _____ Respiratory System

10. _____ Skeletal System

A. Produces hormones that communicate with the cells in the body

B. Breaks down food to get nutrients

C. Controls the entire body and stores information

D. Responsible for movement

E. One of the most important; it supplies the body with oxygen and helps the bird talk

F. Responsible for transporting nutrients and wastes thru the body

G. Supports the body's structure

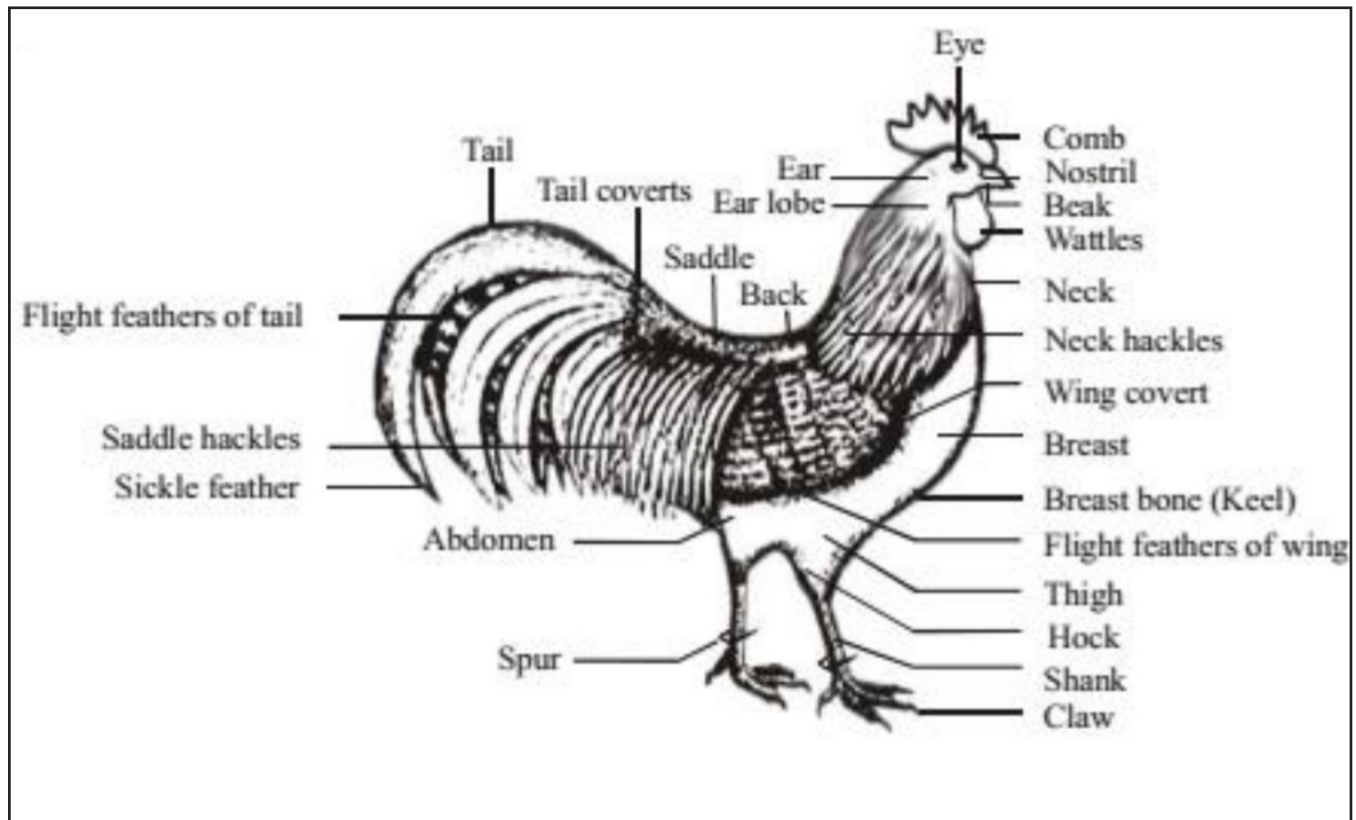
H. Fights diseases and pathogens

I. Removes liquid and solid waste from the body

J. Responsible for producing offspring; the system type depends on the sex of the bird

External Parts of Poultry

Chicken Anatomy



***Vent: External part of the cloaca, situated under the tail of the bird.

***Fluff: Soft fleecy feathers on the bird's bottom.

Answers to Body Systems Worksheet

1.F, 2.B, 3.A, 4.I, 5.H, 6.D, 7.C, 8.J, 9.E, 10.G

Chicken Anatomy Cards

<p>Eye</p>	<p>Comb</p>
<p>Nostril</p>	<p>Beak</p>
<p>Wattles</p>	<p>Neck</p>
<p>Neck Hackles</p>	<p>Wing Covert</p>
<p>Breast</p>	<p>Keel Bone</p>

Chicken Anatomy Cards

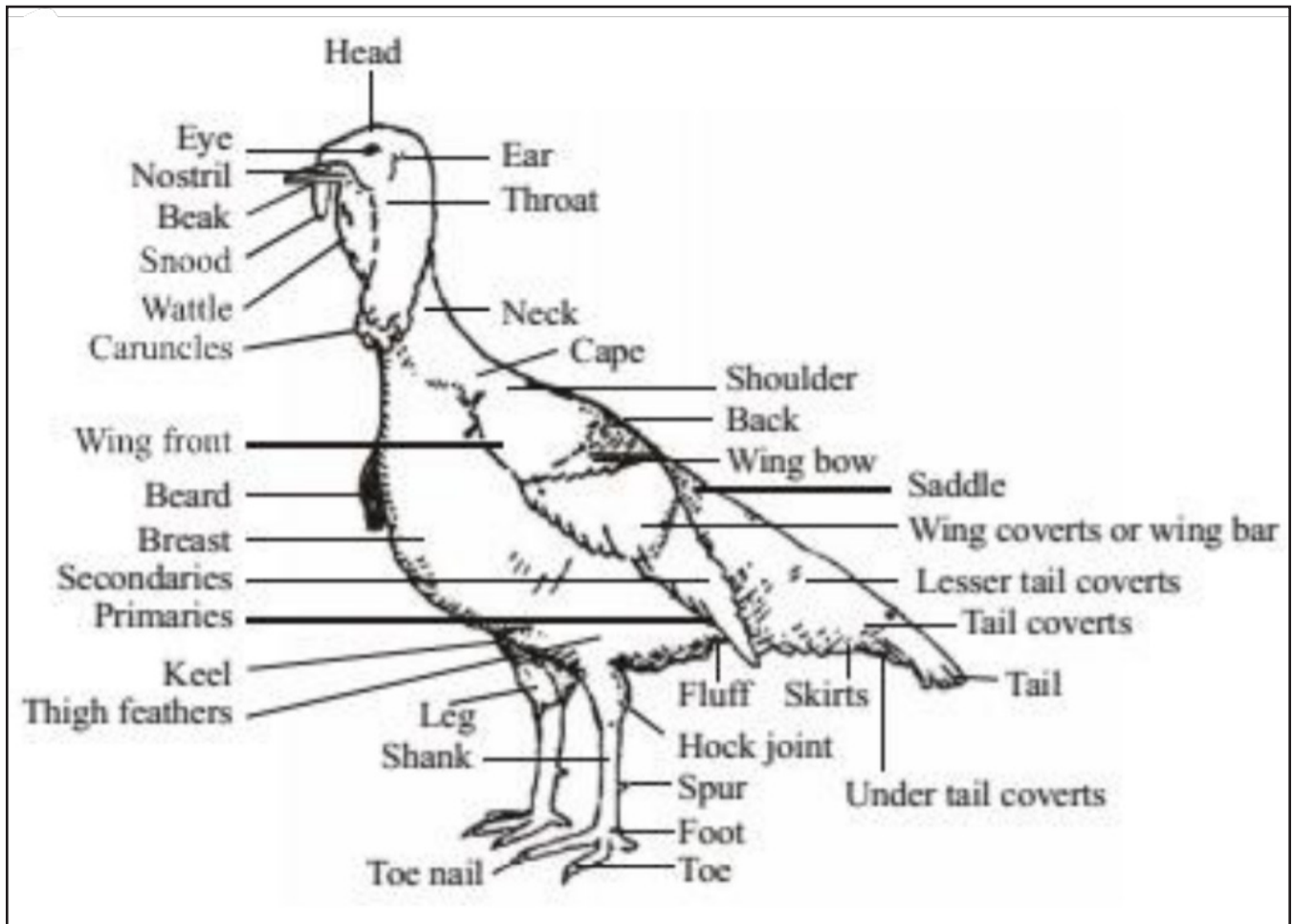
<p>Flight Feathers</p>	<p>Thigh</p>
<p>Hock</p>	<p>Shank</p>
<p>Claw</p>	<p>Spur</p>
<p>Abdomen</p>	<p>Sickle Feathers</p>
<p>Saddle Feathers</p>	<p>Tail Feathers</p>

Chicken Anatomy Cards

<p>Tail</p>	<p>Vent</p>
<p>Fluff</p>	<p>Tail Coverts</p>
<p>Saddle</p>	<p>Back</p>
<p>Ear Lobe</p>	<p>Ear</p>

External Parts of Poultry

Turkey Anatomy



Turkey Anatomy Cards

Head	Ear
Eye	Throat
Nostril	Beak
Snood	Wattles
Caruncles	Wing Front

Turkey Anatomy Cards

Beard	Breast
Secondary Feathers	Primary Feathers
Keel	Thigh
Leg	Shank
Toenails	Toe

Turkey Anatomy Cards

Foot

Spur

Hock

Fluff

Skirts

Tail
Coverts

Tail

Wing Bar

Wing Bow

Back

Turkey Anatomy Cards

Shoulder	Cape
Neck	Lesser Tail Coverts
Saddle	

POULTRY NUTRITION

4



What's in My Animal's Food?

Jeremy Case, UI Extension 4-H Program Assistant

Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will understand the types of feeds and supplements. Youth will be able to read feed labels and determine if their choice of feed has the nutritional requirements of their poultry.

Supplies

- Labels for any poultry feed from a feed store or the internet
- Pencils - enough for group
- Enough copies for group of the *Understanding Feed Labels* worksheet of the appropriate animal

Pre-Lesson Preparation

- Tell each youth before the activity to bring the label of the poultry feed they are currently using or planning to use to feed their animals. These can range from turkey feeds to wild birdseed. Try to get at least one that is good for broilers or turkeys.
- As the activity leader, secure a physical feed label of a poultry feed. This can be downloaded from the internet or torn off a feed bag.
- Print off copies of the worksheet *Understanding Feed Labels* depending on your group's animal.

Lesson Directions and Outline

Have each person in the group say what they recently had for breakfast, lunch, or dinner. Once finished, ask them if they know exactly what was in their meal. Was their meal healthy? Did it give them all the nutrients they needed?

Our poultry are just like us; they need good quality feed that will help them grow well and feel great. As

poultry owners, it's our responsibility to ensure that our animals receive all the nutrients they need in their feed and to give them supplements if the feeds are deficient.

Conducting the Activity (DO)

Part A (~20–25 minutes)

1. Have members complete the *Understanding Feed Labels* worksheet depending on which animals they are raising. Split the youth into their respective animal groups.
2. Walk the members through each section of the worksheet and have youth take turns reading the paragraphs. *Note:* If youth are struggling to answer worksheet questions, give them hints or encourage them to work with others in the group.

Part B (~20 minutes)

1. Bring the youth back together and have them take out their individual feed labels. Note that some may have duplicate labels.
2. Have the youth work together to determine whether each feed would work for their animal. Be sure to ask them why.

What Did We Learn? (REFLECT)

- What did you learn while doing these activities?
- Were you surprised to see all the variety of ingredients in your poultry's feed? If so, why?

Why Is That Important? (APPLY)

- Why is knowing what's in your birds' feed important?
- How can you make sure that your birds get the nutrient that might not be in your feed?

Resources

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Nutrition: Analyzing Nutrition Labels - Market Broilers - Handout 1

Member Name: _____

Understanding Feed Labels

Just like you, your poultry need good food to grow! In this activity you will learn how to feed your birds and read feed labels to ensure that they get all the nutrients they need.

Market Broilers:

Market broilers are best started on a commercial chick starter mix. This can be found at any feed store. These feeds have all the nutrients that your chicks need during the starter period, which is between week 0 and week 3.

After the starter period, your chicks will need to switch to a higher-protein feed to help them grow. The grower period lasts from week 3 to week 6. Feeding your birds a 20%–23% protein feed during this time is best. You also might notice that your birds look half-naked. This is perfectly normal, as they are bred to produce meat, not to look pretty.

During the finisher period between week 6 and week 8, your broilers should be switched onto a finishing feed to ensure that they have proper muscling and fat to look good for show. Be sure to weigh your birds daily during this period and track their growth. A broiler can gain as much as 1.5–2.0 lbs during the last week!

Remember that your broilers will gain roughly 1 lb of weight for every 2 lb of feed. Broilers should weigh about 5 lb at the end of their lifetime (42–56 days) and each bird will need about 10 lb of feed to reach this weight. If the project takes longer than eight weeks, then your broilers will be considered roasters. Roasters aren't as efficient with converting feed into meat and can have problems supporting their weight, so keep a close eye on how much you feed them. Target weight for broilers is 5 lb and between 6 lb and 12 lb for roasters. Market weight requirements can differ between counties, so be sure to check with your Extension office for minimum weights.

Reading Feed Labels:

Labels list all the ingredients in the feed and the nutrient concentrations. Since there are so many chicken feed options, labels are really helpful when deciding which feed to give your birds. Use the feed label provided by your activity leader to answer the following questions.

1. How much protein content does this feed have?
2. Does this feed have vitamin B-12?
3. What does “ppm” mean and what does it measure?
4. What does IU/lb measure?
5. Would this feed be good for starting chicks? Why or why not?

Feed Supplements:

Feed supplements are a great way to add nutrients that your feed may lack. Most supplements are premade and can be mixed into your poultry's water or food. They can help your poultry get extra vitamins and look healthy for the fair. Feed supplements are healthy ways to ensure your poultry's health—only if you follow the proper dosage on the supplement's directions.

Match the feed supplements below to the benefits each one gives to your chickens. Some answers may be used twice.

- | | |
|----------------------------|---|
| 1. _____ Grit | A. Helps the poultry grow strong bones |
| 2. _____ Calcium | B. Excellent source of protein |
| 3. _____ Probiotics | C. Provides iron and minerals; can help supplements stick to the feed |
| 4. _____ Soybean Meal | D. Tiny rocks that help chickens digest food in their gizzards |
| 5. _____ Dried Mealworms | E. Good bacteria that help poultry digest their food |
| 6. _____ Molasses | F. Calm poultry down and stay hydrated in hot summer months |
| 7. _____ Electrolytes | G. Help the chickens grow and promote normal body functions |
| 8. _____ Vitamins/Minerals | |

Poultry Nutrition: Analyzing Nutrition Labels - Market Turkeys - Handout 2

Member Name: _____

Understanding Feed Labels

Just like you, your poultry need good food to grow! In this activity you will learn how to feed your birds and read feed labels to ensure that they get all the nutrients they need.

Market Turkeys:

Market turkeys are best started on a commercial poult (short for “young fowl”) starter mix. This can be found at any feed store. These feeds have all the nutrients that your flock needs during the starter period, which is between week 0 and week 8. The feed should be about 28% protein content. Turkey nutritional requirements are very similar to chickens, but they need slightly more protein and feed because they are larger birds. **Game feeds** have high-protein content to raise turkeys and other game fowl on. You should start your turkeys on 1 lb of feed per week when young and gradually increase it to 8 lb per week toward the end of your project.

After the starter period, your poults will need to switch to a higher-protein feed to help them grow meat. The grower period lasts from week 8 to week 14. Feeding your birds a 20%–22% protein feed during this time is best.

Between week 14 and week 22, the finishing period, your turkeys should be switched onto a finishing feed to ensure that they have proper muscling and fat to look good for show. Be sure to weigh your birds daily during this period and track their growth so that your turkey hits the target weight, which is around 20 lb for toms and 15 lb for hens. Market weight requirements can differ between counties, so be sure to check with your Extension office for minimum weights.

Reading Feed Labels:

Labels list all the ingredients in the feed and the nutrient concentrations. Since there are so many turkey feed options, labels are really helpful when deciding what to give your birds. Use the feed label provided by your activity leader to answer the following questions.

1. How much protein content does this feed have?
2. Does this feed have vitamin B-12?
3. What does “ppm” mean?
4. What does IU/lb measure?
5. Would this feed be good for starting poults? Why or why not?

Feed Supplements:

Feed supplements are a great way to add nutrients that your feed may lack. Most supplements are premade and can be mixed into your poultry's water and food. They can help your poultry get extra vitamins and look healthy for the fair. They are healthy ways to ensure your poultry's health—only if you follow the proper dosage on the supplement's directions.

Match the feed supplements below to the benefits each one gives to your turkeys. Some answers may be used twice.

- | | |
|----------------------------|---|
| 1. _____ Grit | A. Helps the poultry grow strong bones |
| 2. _____ Calcium | B. Excellent source of protein |
| 3. _____ Probiotics | C. Provides iron and minerals; can help supplements stick to the feed |
| 4. _____ Soybean Meal | D. Tiny rocks that help turkeys digest food in their gizzards |
| 5. _____ Dried Mealworms | E. Good bacteria that help poultry digest their food |
| 6. _____ Molasses | F. Calm poultry down and stay hydrated in hot summer months |
| 7. _____ Electrolytes | G. Help the turkeys grow and promote normal body functions |
| 8. _____ Vitamins/Minerals | |



Answers to Worksheets

Market Broilers:

Reading Feed Labels

1. *Varies depending on the label.*
2. *Varies depending on the label.*
3. PPM means parts per million. It's a measurement of concentration or how much of something the feed has.
4. IU/lb measures how much vitamin or mineral is in a pound of feed.
5. *Consider vitamins, minerals, and protein for this answer.*

Feed Supplements

- | | |
|------|------|
| 1. D | 5. B |
| 2. A | 6. C |
| 3. E | 7. F |
| 4. B | 8. G |

Market Turkeys:

Reading Feed Labels

1. *Varies depending on the label.*
2. *Varies depending on the label.*
3. PPM means parts per million. It's a measurement of concentration or how much of something the feed has.
4. IU/lb measures how much vitamin or mineral is in a pound of feed.
5. *Consider vitamins, minerals, and protein for this answer.*

Feed Supplements

- | | |
|------|------|
| 1. D | 5. B |
| 2. A | 6. C |
| 3. E | 7. F |
| 4. B | 8. G |

HEALTH & BIOSECURITY

5



Are My Birds Healthy?

Jeremy Case, UI Extension 4-H Program Assistant

Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will understand the types of pathogens that cause illness. Youth will be able to perform a health check on poultry and learn about biosecurity measures for disease prevention.

Supplies

- A live/stuffed chicken or turkey
- “Common Poultry Diseases” for student reference
- Enough copies of *Biosecurity: Protecting Your Livestock and Poultry Factsheet* for group

Pre-Lesson Preparation

- Review information in lesson directions regarding the differences between parasitic, viral, and bacterial infections.
- Review *Biosecurity: Protecting Your Livestock and Poultry Factsheet*.
- Reference the Fitting and Showing Poultry module (lesson 8 plan) to understand the basics of poultry showmanship.

Lesson Directions and Outline

Having healthy poultry is very important for a market project, as the goal is to sell the animal for more than the cost of raising it and earn a net profit. If you don't care for your poultry properly, their death can result in financial loss.

Disease is inevitable, so it's very important to be able to judge the condition of your poultry through a detailed health check. A health check is when you closely inspect each part of the poultry and look for potential symptoms, a practice similar to showmanship.

Many types of diseases can affect poultry. These include viral, parasitic, and bacterial infections. They spread through physical touch, air, fecal contact, vectors (e.g., mosquitoes), and contaminated water.

Viral infections are caused by viruses, which contain small pieces of RNA or DNA surrounded by a protein or fatty coat. Viruses require host cells to reproduce, later killing the host cell and harming the poultry through tissue damage. Marek's disease and fowl pox are examples of viral infections. Vaccines are given to prevent—not treat—viral infections, typically within days of hatching.

Parasitic infections are caused by an organism (a parasite) that lives inside or on another organism (the host) and uses it to grow at the expense of the host. Mites, lice, worms, and protozoa are examples of parasites that affect poultry. Parasites make it easier for bacterial or viral infections to occur.

Bacterial illnesses are caused by bacteria, which are single-celled organisms. They can be very helpful to poultry and can fight illness or assist with digestion (e.g., probiotics). Very few species of bacteria actually cause illness by releasing chemical toxins that damage tissue. Prescribed antibiotics are used to treat bacterial infections. When using antibiotics, it's very important that you use them as directed to prevent creating superbugs. If using antibiotics, a withdrawal period is mandatory before slaughter to ensure that the antibiotics in the meat of the poultry are at a safe concentration for consumption. The withdrawal period varies depending on each antibiotic.

An ounce of prevention equals a pound of cure. The best way to prevent diseases in poultry and keep yourself safe is through biosecurity measures. Biosecurity is procedures we use to ensure that harmful diseases don't enter our poultry facilities. These procedures can vary depending on the size of the poultry facility, but include animal vaccination, sanitizing shoes upon entry and exit, scrubbing equipment with hot water and soap daily, and frequent handwashing. Large poultry producers even have inspectors from the United States Department of Agriculture Food Safety and Inspection Service to make sure that proper biosecurity procedures are being followed so that consumers can enjoy safe, quality poultry products.

Conducting the Activity (DO)

Part A (~10–15 minutes)

1. Lead a discussion with the students regarding the difference between bacterial, viral, and parasitic diseases. This should include how they are spread and how they affect poultry.
2. Introduce the concept of biosecurity measures. Discuss what it is, why it's important, and brainstorm some preventive measures. Utilize the APHIS-Factsheet as needed.

Part B (~20–30 minutes)

1. Introduce what a poultry health check is and explain its importance. A health check is like showmanship, just a more informal and detailed evaluation of the bird.
2. Have the students use the turkey or chicken (preferably live) to analyze each part of the animal and explain its condition. Ask them to think of possible diseases that could affect each part, such as eye worm or bumblefoot.

What Did We Learn? (REFLECT)

- What did you learn while doing these activities?
- What are the types of diseases that can affect poultry?
- Why is a health check important?

Why is that important? (APPLY)

- What are some biosecurity measures that you can use to prevent your poultry from getting sick?
- Where could you find information to help you diagnose and treat your poultry if they are ill?

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Common Poultry Diseases ¹

G. D. Butcher, J. P. Jacob, and F. B. Mather²

Respiratory Diseases

There are many common and important diseases which can affect the respiratory system (air passages, lungs, air sacs) of poultry (see Table 1). Poultry refers to birds that people keep for their use and generally includes the chicken, turkey, duck, goose, quail, pheasant, pigeon, guinea fowl, pea fowl, ostrich, emu, and rhea. Due to modern systems of management, usually with high poultry densities, these diseases are able to readily spread.

Fowl Pox

Synonyms: chicken pox (not to be confused with chicken pox in humans; the human disease does not affect poultry and vice versa), sore head, avian diphtheria, bird pox

Species affected: Most poultry—chickens, turkeys, pheasants, quail, ducks, psittacine, and ratites—of all ages are susceptible.

Clinical signs: There are two forms of fowl pox. The dry form is characterized by raised, wart-like lesions on unfeathered areas (head, legs, vent, etc.). The lesions heal in about 2 weeks. If the scab is removed before healing is complete, the surface beneath is raw and bleeding. Unthriftiness and retarded growth are typical symptoms of fowl pox. In laying hens, infection results in a transient decline in egg production (see Table 1).

In the wet form there are canker-like lesions in the mouth, pharynx, larynx, and trachea. The wet form may cause

respiratory distress by obstructing the upper air passages. Chickens may be affected with either or both forms of fowl pox at one time.

Transmission: Fowl pox is transmitted by direct contact between infected and susceptible birds or by mosquitos. Virus-containing scabs also can be sloughed from affected birds and serve as a source of infection. The virus can enter the blood stream through the eye, skin wounds, or respiratory tract. Mosquitos become infected from feeding on birds with fowl pox in their blood stream. There is some evidence that the mosquito remains infective for life. Mosquitos are the primary reservoir and spreaders of fowl pox on poultry ranges. Several species of mosquito can transmit fowl pox. Often mosquitos winter-over in poultry houses so, outbreaks can occur during winter and early spring.

Treatment: No treatment is available. However, fowl pox is relatively slow-spreading. Thus, it is possible to vaccinate to stop an outbreak. The wing-web vaccination method is used for chickens and the thigh-stick method for turkeys older than 8 weeks.

Prevention: Fowl pox outbreaks in poultry confined to houses can be controlled by spraying to kill mosquitos. However, if fowl pox is endemic in the area, vaccination is recommended. Do not vaccinate unless the disease becomes a problem on a farm or in the area. Refer to the publication PS-36 (Vaccination of Small Poultry Flocks) for more information on fowl pox vaccinations.

1. This document is PS47, one of a series of the Veterinary Medicine–Large Animal Clinical Sciences Department, UF/IFAS Extension. Original publication date May 1999. Reviewed December 2018. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication.

2. G. D. Butcher, Extension poultry veterinarian, Faculty of Veterinary Medicine; J. P. Jacob, poultry Extension coordinator; and F. B. Mather, poultry Extension specialist, Dairy and Poultry Sciences Department, UF/IFAS Extension, Gainesville, FL 32611.

Newcastle Disease

Synonyms: pneumoencephalitis

The highly contagious and lethal form of Newcastle disease is known as viscerotropic (attacks the internal organs) velogenic Newcastle disease, VVND, exotic Newcastle disease, or Asiatic Newcastle disease. VVND is not present in the United States poultry industry at this time.

Species affected: Newcastle disease affects all birds of all ages. Humans and other mammals are also susceptible to Newcastle. In such species, it causes a mild conjunctivitis.

Clinical signs: There are three forms of Newcastle disease—mildly pathogenic (lentogenic), moderately pathogenic (mesogenic) and highly pathogenic (velogenic). Newcastle disease is characterized by a sudden onset of clinical signs which include hoarse chirps (in chicks), watery discharge from nostrils, labored breathing (gasp-ing), facial swelling, paralysis, trembling, and twisting of the neck (sign of central nervous system involvement). Mortality ranges from 10 to 80 percent depending on the pathogenicity. In adult laying birds, symptoms can include decreased feed and water consumption and a dramatic drop in egg production (see Table 1).

Transmission: The Newcastle virus can be transmitted short distances by the airborne route or introduced on contaminated shoes, caretakers, feed deliverers, visitors, tires, dirty equipment, feed sacks, crates, and wild birds. Newcastle virus can be passed in the egg, but Newcastle-infected embryos die before hatching. In live birds, the virus is shed in body fluids, secretions, excreta, and breath.

Treatment: There is no specific treatment for Newcastle disease. Antibiotics can be given for 3–5 days to prevent secondary bacterial infections (particularly *E. coli*). For chicks, increasing the brooding temperature 5°F may help reduce losses.

Prevention: Prevention programs should include vaccination (see publication PS-36, Vaccination of Small Poultry Flocks), good sanitation, and implementation of a comprehensive biosecurity program.

Infectious Bronchitis

Synonyms: IB, bronchitis, cold

Species affected: Infectious bronchitis is a disease of chickens only. A similar disease occurs in bobwhite quail (quail bronchitis), but it is caused by a different virus.

Clinical signs: The severity of infectious bronchitis infection is influenced by the age and immune status of the flock, by environmental conditions, and by the presence of other diseases. Feed and water consumption declines. Affected chickens will be chirping, with a watery discharge from the eyes and nostrils, and labored breathing with some gasping in young chickens. Breathing noises are more noticeable at night while the birds rest. Egg production drops dramatically. Production will recover in 5 or 6 weeks, but at a lower rate. The infectious bronchitis virus infects many tissues of the body, including the reproductive tract (see Table 1). Eggshells become rough and the egg white becomes watery. (See publication PS-24, Egg Quality, for other causes of poor egg quality.)

Transmission: Infectious bronchitis is a very contagious poultry disease. It is spread by air, feed bags, infected dead birds, infected houses, and rodents. The virus can be egg-transmitted, however, affected embryos usually will not hatch.

Treatment: There is no specific treatment for infectious bronchitis. Antibiotics for 3–5 days may aid in combating secondary bacterial infections. Raise the room temperature 5°F for brooding-age chickens until symptoms subside. Baby chicks can be encouraged to eat by using a warm, moist mash.

Prevention: Establish and enforce a biosecurity program. Vaccinations are available.

Quail Bronchitis

Synonyms: none

Species affected: Bobwhite quail are affected. Japanese corturnix quail are resistant. The disease is prevalent in the southern states where bobwhite quail are common. Quail bronchitis occurs seasonally as new hatches and broods come along each year.

Clinical signs: Respiratory distress occurs with tracheal rales (rattles), sneezing, and coughing. Feed and water consumption declines dramatically. There can also be conjunctivitis (inflammation of the eye). Loose watery feces are seen in older and sub-acutely affected birds. Nasal discharges are not seen, differentiating quail bronchitis from similar diseases in other poultry (see Table 1).

Transmission: Once infected, quail bronchitis remains on the farm for the duration of the breeding season, infecting each successive brood.

Treatment: There is no specific treatment against quail bronchitis. Quail bronchitis infections are often complicated by concurrent mycoplasma infections. Antibiotics can be used to combat secondary infections. Add tylosin (500g/ton) to the feed for 10 days, withhold the medication for 5 days, and then repeat medication for 5 days. Alternate medication regimens are tylosin (Tylan) or erythromycin (Gallimycin) in the drinking water for the same period of time.

Prevention: There is no commercial vaccine on the market. It is necessary to break the cycle by depopulating and thoroughly cleaning and disinfecting pens and equipment, followed by a 30–90 day quarantine of the facilities.

Avian Influenza

Synonyms: AI, flu, influenza, fowl plague

Species affected: Avian influenza can occur in most, if not all, species of birds.

Clinical signs: Avian influenza is categorized as mild or highly pathogenic. The mild form produces listlessness, loss of appetite, respiratory distress, diarrhea, transient drops in egg production, and low mortality. The highly pathogenic form produces facial swelling, blue comb and wattles, and dehydration with respiratory distress. Dark red/white spots develop in the legs and combs of chickens. There can be blood-tinged discharge from the nostrils. Mortality can range from low to near 100 percent. Sudden exertion adds to the total mortality. Egg production and hatchability decreases. There can be an increase in production of soft-shelled and shell-less eggs (see Table 1).

Transmission: The avian influenza virus can remain viable for long periods of time at moderate temperatures and can live indefinitely in frozen material. As a result, the disease can be spread through improper disposal of infected carcasses and manure. Avian influenza can be spread by contaminated shoes, clothing, crates, and other equipment. Insects and rodents may mechanically carry the virus from infected to susceptible poultry.

Treatment: There is no effective treatment for avian influenza. With the mild form of the disease, good husbandry, proper nutrition, and broad spectrum antibiotics may reduce losses from secondary infections. Recovered flocks continue to shed the virus. Vaccines may only be used with special permit.

Prevention: A vaccination program used in conjunction with a strict quarantine has been used to control mild forms

of the disease. With the more lethal forms, strict quarantine and rapid destruction of all infected flocks remains the only effective method of stopping an avian influenza outbreak. If you suspect you may have Avian Influenza in your flock, even the mild form, you must report it to the state veterinarian's office. A proper diagnosis of avian influenza is essential. Aggressive action is recommended even for milder infections as this virus has the ability to readily mutate to a more pathogenic form.

For more information on avian influenza, refer to publication PS-38 (Avian Influenza in Poultry Species).

Infectious Coryza

Synonyms: roup, cold, coryza

Species affected: chickens, pheasants, and guinea fowl. Common in game chicken flocks.

Clinical signs: Swelling around the face, foul smelling, thick, sticky discharge from the nostrils and eyes, labored breathing, and rales (rattles—an abnormal breathing sound) are common clinical signs. The eyelids are irritated and may stick together. The birds may have diarrhea and growing birds may become stunted (see Table 1).

Mortality from coryza is usually low, but infections can decrease egg production and increase the incidence and/or severity of other diseases. Mortality can be as high as 50 percent, but is usually no more than 20 percent. The clinical disease can last from a few days to 2–3 months, depending on the virulence of the pathogen and the existence of other infections such as mycoplasmosis.

Transmission: Coryza is primarily transmitted by direct bird-to-bird contact. This can be from infected birds brought into the flock as well as from birds which recover from the disease which remain carriers of the organism and may shed intermittently throughout their lives. Birds risk exposure at poultry shows, bird swaps, and live-bird sales. Inapparent infected adult birds added into a flock are a common source for outbreaks. Within a flock, inhalation of airborne respiratory droplets, and contamination of feed and/or water are common modes of spread.

Treatment: Water soluble antibiotics or antibacterials can be used. Sulfadimethoxine (Albon®, Di-Methox™) is the preferred treatment. If it is not available, or not effective, sulfamethazine (Sulfa-Max®, SulfaSure™), erythromycin (gallimycin®), or tetracycline (Aureomycin®) can be used as alternative treatments. Sulfa drugs are not FDA approved for pullets older than 14 weeks of age or for commercial

layer hens. While antibiotics can be effective in reducing clinical disease, they do not eliminate carrier birds.

Prevention: Good management and sanitation are the best ways to avoid infectious coryza. Most outbreaks occur as a result of mixing flocks. All replacement birds on “coryza-endemic” farms should be vaccinated. The vaccine (Coryza-Vac) is administered subcutaneously (under the skin) on the back of the neck. Each chicken should be vaccinated four times, starting at 5 weeks of age with at least 4 weeks between injections. Vaccinate again at 10 months of age and twice yearly thereafter.

Infectious Laryngotracheitis

Synonyms: LT, ILT, trach, laryngo

Species affected: Chickens and pheasants are affected by LT. Chickens 14 weeks and older are more susceptible than young chickens. Most LT outbreaks occur in mature hens. In recent years, LT has also caused significant respiratory problems in broilers greater than 3 weeks of age, especially during the cooler seasons of the year. This is believed to be due to unwanted spread of LT vaccines between poultry flocks.

Clinical signs: The clinical sign usually first noticed is watery eyes. Affected birds remain quiet because breathing is difficult. Coughing, sneezing, and shaking of the head to dislodge exudate plugs in the windpipe follow. Birds extend their head and neck to facilitate breathing (commonly referred to as “pump handle respiration”). Inhalation produces a wheezing and gurgling sound. Blood-tinged exudates and serum clots are expelled from the trachea of affected birds. Many birds die from asphyxiation due to a blockage of the trachea when the tracheal plug is freed (see Table 1).

Transmission: LT is spread by the respiratory route. LT is also spread from flock to flock by contaminated clothing, shoes, tires, etc. Birds that recover should be considered carriers for life. LT may be harbored in speciality poultry such as exhibition birds and game fowl.

Treatment: Incinerate dead birds, administer antibiotics to control secondary infection, and vaccinate the flock. Mass vaccination by spray or drinking water method is not recommended for large commercial or caged flocks. Individual bird administration by the eye-drop route is suggested. Follow manufacturers instructions. In small poultry flocks, use a swab to remove plug from gasping birds, and vaccinate by eye-drop method.

Prevention: Vaccinate replacement birds for outbreak farms. Vaccination for LT is not as successful as for other disease, but is an excellent preventive measure for use in outbreaks and in epidemic areas. Refer to the publication PS-36 (Vaccination of Small Poultry Flocks) for more information on LT vaccinations.

Turkey Rhinotracheitis

Synonyms: TRT, rhino tracheitis

Species affected: Turkeys of all ages are susceptible, but the disease is most severe in young poults. Chickens are susceptible to the virus. Experimentally, guinea fowl and pheasants are susceptible, but waterfowl and pigeons are resistant.

Clinical signs: Respiratory signs in poults include snick-ing, rales, sneezing, nasal exudates (often frothy), foamy conjunctivitis, and sinusitis. Drops in egg production can be as much as 70 percent (see Table 1).

Transmission: Spread is primarily by contact with contaminated environments, feed and water, recovered birds, equipment, and personnel.

Treatment: No drugs are available to combat the virus. Antibiotic therapy is recommended to control secondary bacterial infections.

Prevention: No vaccines are currently available. Prevention is dependent on a comprehensive biosecurity program.

Chlamydiosis

Synonyms: ornithosis, psittacosis, parrot fever

The disease was called psittacosis or parrot fever when diagnosed in psittacine (curve-beaked) birds, and called ornithosis when diagnosed in all other birds or in humans. Currently, the term chlamydiosis is used to describe infections in any animal.

Species affected: Affected species include turkeys, pigeons, ducks, psittacine (curve-beaked) birds, captive and aviary birds, many other bird species, and other animals. Chickens are not commonly affected. Humans are susceptible, especially older and immunosuppressed individuals who are at a higher risk. Chlamydiosis in humans is an occupational disease of turkey growers, haulers, and processing workers in the live-bird areas and of workers in pet-bird aviaries although the incidence is rare. For more information, refer

to publication PS-23 (Avian Diseases Transmissible to Humans).

Clinical signs: Clinical signs in most birds include nasal-ocular discharge, conjunctivitis, sinusitis, diarrhea, weakness, loss of body weight, and a reduction in feed consumption. In turkeys there is also respiratory distress and loose yellow to greenish-yellow colored droppings. Chlamydia runs rather slowly through turkey flocks, with a maximum incidence of around 50 percent (see Table 1).

Transmission: The primary means of transmission is through inhalation of fecal dust and respiratory tract secretions. It can also be transmitted on contaminated clothing and equipment. Recovered birds remain carriers and will continue to intermittently shed the infective agent for long periods after clinical signs have subsided. Environmental stress may provoke a reoccurrence of the disease.

Treatment: Chlorotetracycline can be given in the feed (200–400 g/ton) for 3 weeks. Other antibiotics are usually ineffective. Recovered birds are safe for processing. Permanent lesions on the heart and liver are not infectious. FDA withdrawal periods for medications used must be strictly observed to avoid residual chemicals in the tissues.

Prevention: There is no vaccine. Have a good biosecurity program, excluding wild birds as much as possible.

Swollen Head Syndrome

Synonyms: Facial cellulitis, thick head, Dikkop, SHS

Species affected: Chickens and turkeys are the known natural hosts. Experimentally, guinea fowl and pheasants are susceptible but pigeons, ducks, and geese are resistant to the infection. SHS does not presently occur in the United States, but is present in most countries of the world.

Clinical signs: In chicks and poults, there is initial sneezing, followed by reddening and swelling of the tear ducts and eye tissue. Facial swelling will extend over the head and down the jaw and wattles. Adult chickens have mild respiratory disease followed by a few birds having swollen heads. Other signs include disorientation, twisting of the neck, and a significant drop in egg production (see Table 1).

Transmission: The infection spreads by direct contact with infected birds or indirectly by exposure to infectious material.

Treatment: There is no proven medication for swollen head syndrome. The disease is caused by a virus classified as a pneumovirus. A disease closely mimicking SHS is caused by a mixed infection of respiratory viruses and specific bacteria. Antibiotic therapy may be helpful against the bacterial component.

Prevention: A commercial vaccine is available. Swollen head syndrome is considered an exotic disease and a live vaccine is not approved for use in the United States.

Synonyms: MG, chronic respiratory disease (CRD), infectious sinusitis, mycoplasmosis

Species affected: chickens, turkeys, pigeons, ducks, peafowl, and passerine birds.

Clinical signs: Clinical symptoms vary slightly between species. Infected adult chickens may show no outward signs if infection is uncomplicated. However, sticky, serous exudate from nostrils, foamy exudate in eyes, and swollen sinuses can occur, especially in broilers. The air sacs may become infected. Infected birds can develop respiratory rales and sneeze. Affected birds are often stunted and unthrifty (see Table 1).

There are two forms of this disease in the turkey. With the “upper form” the birds have watery eyes and nostrils, the infraorbitals (just below the eye) become swollen, and the exudate becomes caseous and firm. The birds have respiratory rales and show unthriftiness.

With the “lower form”, infected turkeys develop airsacculitis. As with chickens, birds can show no outward signs if the infection is uncomplicated. Thus, the condition may go unnoticed until the birds are slaughtered and the typical lesions are seen. Birds with airsacculitis are condemned.

MG in chicken embryos can cause dwarfing, airsacculitis, and death.

Transmission: MG can be spread to offspring through the egg. Most commercial breeding flocks, however, are MG-free. Introduction of infected replacement birds can introduce the disease to MG-negative flocks. MG can also be spread by using MG-contaminated equipment.

Treatment: Outbreaks of MG can be controlled with the use of antibiotics. Erythromycin, tylosin, spectinomycin, and lincomycin all exhibit anti-mycoplasma activity and have given good results. Administration of most of these antibiotics can be by feed, water or injection. These are

effective in reducing clinical disease. However, birds remain carriers for life.

Prevention: Eradication is the best control of mycoplasma disease. The National Poultry Improvement Plan monitors all participating chicken and turkey breeder flocks.

Synonyms: MS, infectious synovitis, synovitis, silent air sac

Species affected: chickens and turkeys.

Clinical signs: Birds infected with the synovitis form show lameness, followed by lethargy, reluctance to move, swollen joints, stilted gait, loss of weight, and formation of breast blisters. Birds infected with the respiratory form exhibit respiratory distress. Greenish diarrhea is common in dying birds (see Table 1). Clinically, the disease is indistinguishable from MG.

Transmission: MS is transmitted from infected breeder to progeny via the egg. Within a flock, MS is spread by direct contact with infected birds as well as through airborne particles over short distances.

Treatment: Recovery is slow for both respiratory and synovitis forms. Several antibiotics are variably effective. The most effective are tylosin, erythromycin, spectinomycin, lincomycin, and chlorotetracycline. These antibiotics can be given by injection while some can be administered in the feed or drinking water. These treatments are most effective when the antibiotics are injected.

Prevention: Eradication is the best and only sure control. Do not use breeder replacements from flocks that have had MS. The National Poultry Improvement Plan monitors for MS.

Synonyms: MM, N strain, H strain

Species affected: MM affects turkeys of all ages, although poults are affected more severely than mature turkeys. Recently, MM has been shown to infect pigeon, quail and peafowl.

Clinical signs: A drop-off in production and hatchability can be expected in breeder flocks. There can be very high mortality in young poults. Unthriftiness, respiratory distress, stunting, crooked neck with deformity of cervical vertebrae, and leg deformation are common in young birds (see Table 1).

Transmission: Egg transmission is low in the early breeding period, but rises as the the age of the flock increases. Infections can be introduced into a flock by contaminated equipment, shoes, and clothing of workers and visitors.

Treatment: Several antibiotics have been effective including tylosin, erythromycin, spectinomycin, and linco-spectinomycin.

Prevention: The best preventive measure is to keep MM-free breeders. The MM-free status of breeders can be confirmed by periodic blood tests through the National Poultry Improvement Plan.

Aspergillosis

Synonyms: brooder pneumonia, mycotic pneumonia, fungal pneumonia, *Aspergillus*. When the source of the disease is the hatchery, the disease is called brooder pneumonia. In older birds, the disease is called aspergillosis.

Species affected: All birds (domestic poultry, pigeons, canary and zoo bird species), animals, humans, and plants are susceptible.

Clinical signs: Aspergillosis occurs as an acute disease of young birds and a chronic disease in mature birds. Young birds have trouble breathing and gasp for air. Characteristically, there are no rales or respiratory sounds associated with aspergillosis. Feed consumption decreases. Occasionally there is paralysis or convulsions caused by the fungal toxin. Mortality in young birds averages 5–20 percent, but may be as high as 50 percent. Mature birds also have respiratory distress, reduced feed consumption, and may have a bluish and dark color of the skin (cyanosis). Nervous disorders, such as twisted necks, may occur in a few birds (see Table 1). Mortality in mature birds is usually less than 5 percent.

Transmission: Aspergillosis is caused by a fungus. The fungus grows well at room temperature and higher. All litter and nest materials (peat moss, peanut hulls, sawdust, peat, bark, straw) have been known to have been contaminated with aspergillus. Feed and water should be suspect when attempting to identify the source of contamination.

Treatment: There is no cure for infected birds. The spread can be controlled by improving ventilation, eliminating the source of the infection, and adding a fungistat (mycostatin, mold curb, sodium or calcium propionate, or gentian violet) to the feed and/or copper sulfate or acidified copper in the drinking water for 3 days. The litter can be sprayed

lightly with an oil-base germicide to control dust and air movement of fungal spores.

Prevention: It is important to thoroughly clean and disinfect the brooding area between broods. Use only clean litter, preferably soft wood shavings. Do not use sawdust, litter high in bark content, or shavings that have been wet.

Viral Diseases (nonrespiratory)

Marek's Disease

Synonyms: acute leukosis, neural leukosis, range paralysis, gray eye (when eye affected)

Species affected: Chickens between 12 to 25 weeks of age are most commonly clinically affected. Occasionally pheasants, quail, game fowl and turkeys can be infected.

Clinical signs: Marek's disease is a type of avian cancer. Tumors in nerves cause lameness and paralysis. Tumors can occur in the eyes and cause irregularly shaped pupils and blindness. Tumors of the liver, kidney, spleen, gonads, pancreas, proventriculus, lungs, muscles, and skin can cause incoordination, unthriftiness, paleness, weak labored breathing, and enlarged feather follicles. In terminal stages, the birds are emaciated with pale, scaly combs and greenish diarrhea (see Table 2).

Marek's disease is very similar to Lymphoid Leukosis, but Marek's usually occurs in chickens 12 to 25 weeks of age and Lymphoid Leukosis usually starts at 16 weeks of age.

Transmission: The Marek's virus is transmitted by air within the poultry house. It is in the feather dander, chicken house dust, feces and saliva. Infected birds carry the virus in their blood for life and are a source of infection for susceptible birds.

Treatment: none

Prevention: Chicks can be vaccinated at the hatchery. While the vaccination prevents tumor formation, it does not prevent infection by the virus.

Lymphoid Leukosis

Synonyms: visceral leukosis, leukosis, big liver, LL

Species affected: Although primarily a disease of chickens, lymphoid leukosis can infect turkeys, guinea fowl, pheasants, and doves, but not on a large scale.

Clinical signs: The virus involved has a long incubation period (4 months or longer). As a result, clinical signs are not noticeable until the birds are 16 weeks or older. Affected birds become progressively weaker and emaciated. There is regression of the comb. The abdomen becomes enlarged. Greenish diarrhea develops in terminal stages (see Table 2).

Transmission: The virus is transmitted through the egg to offspring. Within a flock, it is spread by bird-to-bird contact and by contact with contaminated environments. The virus is not spread by air. Infected chicken are carriers for life.

Treatment: none

Prevention: The virus is present in the yolk and egg white of eggs from infected hens. Most national and international layer breeders have eradicated lymphoid leukosis from their flocks. Most commercial chicks are lymphoid-leukosis negative because they are hatched from LL-free breeders. The disease is still common in broiler breeder flocks.

Infectious Bursal Disease

Synonyms: Gumboro, IBD, infectious bursitis, infectious avian nephrosis

Species affected: chickens

Clinical signs: In affected chickens greater than 3 weeks of age, there is usually a rapid onset of the disease with a sudden drop in feed and water consumption, watery droppings leading to soiling of feathers around the vent, and vent pecking. Feathers appear ruffled. Chicks are listless and sit in a hunched position. Chickens infected when less than 3 weeks of age do not develop clinical disease, but become severely and permanently immunosuppressed (see Table 2).

Transmission: The virus is spread by bird-to-bird contact, as well as by contact with contaminated people and equipment. The virus is shed in the bird droppings and can be spread by air on dust particles. Dead birds are a source of the virus and should be incinerated.

Treatment: There is no specific treatment. Antibiotics, sulfonamides, and nitrofurans have little or no effect. Vitamin-electrolyte therapy is helpful. High levels of tetracyclines are contraindicated because they tie up calcium, thereby producing rickets. Surviving chicks remain unthrifty and more susceptible to secondary infections because of immunosuppression.

Prevention: A vaccine is commercially available.

Equine Encephalitis

Synonyms: EE, EEE, WEE

Note: This disease should not be confused with St. Louis Encephalitis (SLE). Chickens are used as sentinels (test animals) in SLE suspect areas, such as southern Florida. While SLE is also carried by mosquitos, that is where the similarities between the two encephalitis diseases end. Chickens do not get SLE. Refer to Factsheet VM71 (St. Louis Encephalitis—The Role of Chickens) for more information on SLE.

Species affected: Equine encephalitis is a contagious disease of birds (especially pheasants), mammals (especially horses), and people. Birds are the major source of the virus.

Clinical signs: Two forms affect birds: eastern equine encephalitis (EEE) and western equine encephalitis (WEE). The clinical signs are identical and include reduced feed consumption, staggering, and paralysis. Surviving birds may be blind, have muscle paralysis, and have difficulty holding their head up. Damage to the bird's nervous system varies with species. In pheasants, there is pronounced leg paralysis, twisting of the neck, and tremors. Mortality is high. Chukar partridges and turkeys show drowsiness, paralysis, weakness, and death (see Table 2).

Transmission: Infected mosquitoes are the primary source of the virus. The *Culiseta melanuria* mosquito is the primary transmitter of the virus to poultry. Other mosquito species transmit the disease too, but feed mostly on other animals. Cannibalism of sick or dead birds by penmates is a major source of transmission within pens.

Treatment: none

Prevention: Remove the source of infection by establishing mosquito control: keep weeds mowed in a 50-foot strip around bird pens. This removes cover and resting areas for mosquitos. Eliminate mosquito breeding areas. Fog areas with malathion.

It is possible to immunize birds, especially pheasants, with the vaccine prepared for horses. The recommended dose is one-tenth of a horse dose per bird.

Avian Encephalomyelitis

Synonyms: epidemic tremor, AE

Species affected: The disease is most prevalent in chickens less than 6 weeks of age. Pheasants, corturnix quail, and

turkeys are natural hosts as well, but less susceptible than chickens. Ducklings, young pigeons, and guinea fowl can be experimentally infected.

Clinical signs: Signs commonly appear during the first week of life and between the second and third weeks. Affected chicks may first show a dull expression of the eyes, followed by progressive incoordination, sitting on hocks, tremors of the head and neck, and finally paralysis or prostration. Affected chicks are inactive. Some may refuse to walk or will walk on their hocks. In advanced cases, many chicks will lie with both feet out to one side (prostrate) and die. All stages (dullness, tremors, prostration) can usually be seen in an affected flock. Feed and water consumption decreases and the birds lose weight. In adult birds, a transitory drop (5–20 percent) in egg production may be the only clinical sign present. However, in breeding flocks, a corresponding decrease in hatchability is also noted as the virus is egg-transmitted until hens develop immunity. Chickens which survive the clinical disease may develop cataracts later in life (see Table 2).

Transmission: The virus can be transmitted through the egg from infected hen to chick, accounting for disease during the first week of life. The disease can also be spread through a flock by direct contact of susceptible hatchlings with infected birds, accounting for the disease at 2–3 weeks of age. Indirect spread can occur through fecal contamination of feed and water. Recovered birds are immune and do not spread the virus.

Treatment: There is no treatment for outbreaks. Infected birds should be removed, killed and incinerated. Recovered chicks are unthrifty.

Prevention: A vaccine is available.

Egg Drop Syndrome

Synonyms: egg drop, egg drop syndrome 76, EDS-76

Species affected: The natural hosts for EDS virus are ducks and geese, but EDS has become a major cause of reduced egg production in chickens in many parts of the world. No illness has been observed in ducks or geese. Chickens of all ages and breeds are susceptible. The disease is most severe in broiler-breeders and brown-egg layer strains.

Clinical signs: There are no reliable signs other than the effects on egg production and egg quality. Healthy-appearing hens start laying thin-shelled and shell-less eggs. Once established, the condition results in a failure to achieve egg production targets. Transient diarrhea and dullness occur

prior to egg shell changes. Fertility and hatchability are not affected (see Table 2).

Transmission: It is believed that the syndrome was first introduced into chickens from contaminated vaccine. Vertical transmission occurs from infected breeders to chicks. Newly hatched chicks excrete the virus in the feces.

Treatment: There is no successful treatment. Induced molting will restore egg production.

Prevention: Prevention involves a good biosecurity program.

Infectious Tenosynovitis

Synonyms: viral arthritis, tenosynovitis, teno, reovirus enteritis, reovirus septicemia, malabsorption syndrome, helicopter disease

Species affected: turkeys and chickens

Clinical signs: Several serotypes of the reovirus have been identified. Some localize in the joints (tenosynovitis) while others target respiratory or intestinal tissues (septicemic form) (see Table 2).

The principal sign of tenosynovitis is lameness with swelling of the tendon sheaths of the shank and area extending above the hock (see Table 2). Affected birds are lame, sit on their hocks, and are reluctant to move. Rupture of the tendon can occur in older roaster birds, resulting in permanent lameness of the affected leg. If more than two joints are affected, the entire carcass will be condemned.

Infection can also play a part in broiler stunting, the result of malabsorption syndrome. In chicks, malabsorption due to viral enteritis is called “helicopter disease” because feathering is affected. Wing feathers protrude at various angles. A reovirus is believed to play only a secondary role in this syndrome.

In commercial layer flocks, increased mortality may be the first sign of the septicemia form (see Table 2). Egg production will decrease by about two to three times the mortality rate. For example, a mortality rate of 5 percent will be accompanied by a 10–15 percent drop in egg production. In the septicemic form, joint involvement is present but less pronounced. Affected birds become cyanotic (blue) and dehydrated. The tips of the comb turn purplish. The entire comb darkens as the disease progresses (see Table 2).

Transmission: The infection spreads rapidly through broiler flocks, but less rapidly in caged layers. Spread is by respiratory and digestive tract routes. The virus is shed in the feces.

Treatment: There is no satisfactory treatment available. With hens, tetracycline, molasses, and oyster shell therapy is helpful.

Prevention: A vaccine is available for use in endemic areas or on endemic farms.

Nonrespiratory Bacterial Diseases

Fowl Cholera

Synonyms: avian pasteurellosis, cholera, avian hemorrhagic septicemia

Species affected: Domestic fowl of all species (primarily turkeys and chickens), game birds (especially pheasants and ducks), cage birds, wild birds, and birds in zoological collections and aviaries are susceptible.

Clinical signs: Fowl cholera usually strikes birds older than 6 weeks of age. In acute outbreaks, dead birds may be the first sign. Fever, reduced feed consumption, mucoid discharge from the mouth, ruffled feathers, diarrhea, and labored breathing may be seen. As the disease progresses birds lose weight, become lame from joint infections, and develop rattling noises from exudate in air passages. As fowl cholera becomes chronic, chickens develop abscessed wattles and swollen joints and foot pads. Caseous exudate may form in the sinuses around the eyes. Turkeys may have twisted necks (see Table 3).

Transmission: Multiple means of transmission have been demonstrated. Flock additions, free-flying birds, infected premises, predators, and rodents are all possibilities.

Treatment: A flock can be medicated with a sulfa drug (sulfonamides, especially sulfadimethoxine, sulfaquinonxalene, sulfamethazine, and sulfaquinoxalene) or vaccinated, or both, to stop mortality associated with an outbreak. It must be noted, however, that sulfa drugs are not FDA approved for use in pullets older than 14 weeks or for commercial laying hens. Sulfa drugs leave residues in meat and eggs. Antibiotics can be used, but require higher levels and long term medication to stop the outbreak.

Prevention: On fowl cholera endemic farms, vaccination is advisable. Do not vaccinate for fowl cholera unless you

have a problem on the farm. Rodent control is essential to prevent future outbreaks.

Omphalitis

Synonyms: navel ill, mushy chick disease

Species affected: chickens

Clinical signs: Affected chicks may have external navel infection, large unabsorbed yolk sacs, peritonitis with fetid odor, exudates adhering to the navel, edema of the skin of ventral body area, septicemia and dehydration (see Table 3).

Transmission: Infection occurs at the time of hatching or shortly thereafter, before navels are healed. Chicks from dirty hatching eggs or eggs with poor quality shells, or newly hatched chicks placed in dirty holding boxes, are most susceptible. Chicks removed prior to complete healing of the navel due to improper temperature and/or humidity are also more susceptible. Eggs that explode in the hatching tray contaminate other eggs in the tray and increase the incidence.

Treatment: There is no specific treatment for omphalitis. Most affected birds die in the first few days of life. Unaffected birds need no medication.

Prevention: Control is by prevention through effective hatchery sanitation, hatchery procedures, breeder flock surveillance, and proper preincubation handling of eggs. Mushy chicks should be culled from the hatch and destroyed. If chick mortality exceeds 3 percent, the breeder flocks and egg handling and hatching procedures should be reviewed.

Pullorum

Synonyms: bacillary white diarrhea, BWD

Species affected: Chickens and turkeys are most susceptible, although other species of birds can become infected. Pullorum has never been a problem in commercially grown game birds such as pheasant, chukar partridge, and quail. Infection in mammals is rare.

Clinical signs: Death of infected chicks or poults begins at 5–7 days of age and peaks in another 4–5 days. Clinical signs including huddling, droopiness, diarrhea, weakness, pasted vent, gasping, and chalk-white feces, sometimes stained with green bile. Affected birds are unthrifty and stunted because they do not eat (see Table 3). Survivors

become asymptomatic carriers with localized infection in the ovary.

Transmission: Pullorum is spread primarily through the egg, from hen to chick. It can spread further by contaminated incubators, hatchers, chick boxes, houses, equipment, poultry by-product feedstuffs, and carrier birds.

Treatment: Treatment is for flock salvage only. Several sulfonamides, antibiotics, and antibacterials are effective in reducing mortality, but none eradicates the disease from the flock. **Pullorum eradication is required by law.** Eradication requires destroying the entire flock.

Prevention: Pullorum outbreaks are handled, on an eradication basis, by state/federal regulatory agencies. As part of the National Poultry Improvement Program, breeder replacement flocks are tested before onset of production to assure pullorum-free status. This mandatory law includes chickens, turkeys, show birds, waterfowl, game birds, and guinea fowl. In Florida, a negative pullorum test or certification that the bird originated from a pullorum-free flock is required for admission for exhibit at shows and fairs. Such requirements have been beneficial in locating pullorum-infected flocks of hobby chickens.

Necrotic Enteritis

Synonyms: enterotoxemia, rot gut

Species affected: Rapidly growing young birds, especially chickens and turkeys 2–12 weeks of age, are most susceptible. Necrotic enteritis is a disease associated with domestication and is unlikely to threaten wild bird populations. Necrotic enteritis is primarily a disease of broilers, roasters and turkeys. Ulcerative enteritis, on the other hand, commonly affects pullets and quail.

Clinical signs: Initially there is a reduction in feed consumption as well as dark, often blood-stained, feces. Infected chickens will have diarrhea. Chronically affected birds become emaciated. The bird, intestines, and feces emit a fetid odor (see Table 3).

Transmission: Necrotic enteritis does not spread directly from bird to bird. Bacteria are ingested along with infected soil, feces, or other infected materials. The bacteria then grow in the intestinal tract. Infection commonly occurs in crowded flocks, immuno-suppressed flocks, and flocks maintained in poor sanitary conditions.

Treatment: The clostridia bacteria involved in necrotic enteritis is sensitive to the antibiotics bacitracin, neomycin,

and tetracycline. However, antibiotics such as penicillin, streptomycin, and novobiocin are also effective. Bacitracin is the most commonly used drug for control of necrotic enteritis. As with all drugs, legality and withdrawal time requirements must be observed.

Prevention: Prevention should be directed toward sanitation, husbandry, and management.

Ulcerative Enteritis

Synonyms: quail disease

Species affected: Captive quail are extremely susceptible and must be maintained on wire-bottom pens or on preventive medications. Chickens, turkeys, partridges, grouse, and other species are occasionally clinically affected.

Clinical signs: In quail, the disease is acute with high mortality. In chickens, signs are less dramatic. Acute signs are extreme depression and reduction in feed consumption. Affected birds sit humped with eyes closed. Other signs included emaciation, watery droppings streaked with urates, and dull ruffled feathers (see Table 3). Accumulated mortality will reach 50 percent if the flock is not treated.

Transmission: Birds become infected by direct contact with carrier birds, infected droppings or contaminated pens, feed and water. Bacteria are passed in the droppings of sick and carrier birds. Infection can be spread mechanically on shoes, feed bags, equipment, and from contamination by rodents and pets.

Treatment: Bacitracin and neomycin can be used singly or in combination. Other antibiotics and drugs such as tetracyclines, penicillin, Lincomycin, and Virginomycin are also effective. Consult a veterinarian for dose, route, and duration of treatment.

Prevention: Ulcerative enteritis is difficult to prevent in quail. When quail have access to their own droppings, this disease commonly occurs. To eradicate, depopulate stock, thoroughly clean and disinfect, and start over with young, clean stock.

Botulism

Synonyms: limberneck, bulbar paralysis, western duck sickness, alkali disease

Species affected: All fowl of any age, humans, and other animals are highly susceptible. The turkey vulture is the only animal host known to be resistant to the disease.

Clinical signs: Botulism is a poisoning caused by eating spoiled food containing a neurotoxin produced by the bacterium *Clostridium botulinum*. Paralysis, the most common clinical sign, occurs within a few hours after poisoned food is eaten. Pheasants with botulism remain alert, but paralyzed. Legs and wings become paralyzed, then the neck becomes limp. Neck feathers become loose in the follicle and can be pulled easily (see Table 3).

If the amount eaten is lethal, prostration and death follow in 12 to 24 hours. Death is a result of paralysis of respiratory muscles. Fowl affected by sublethal doses become dull and sleepy.

Transmission: Botulism is common in wild ducks and is a frequent killer of waterfowl because the organisms multiply in dead fish and decaying vegetation along shorelines.

Decaying bird carcasses on poultry ranges, wet litter or other organic matter, and fly maggots from decaying substances may harbor botulism. There is no spread from bird to bird.

Treatment: Remove spoiled feed or decaying matter. Flush the flock with Epsom salts (1 lb/1000 hens) in water or in wet mash. It has been reported that potassium permanganate (1:3000) in the drinking water is helpful. Affected birds can be treated with botulism antitoxin injections.

Prevention: Incinerate or bury dead birds promptly. Do not feed spoiled canned vegetables. Control flies. Replace suspected feed.

Staphylococcus

Synonyms: staph infection, staph septicemia, staph arthritis, bumblefoot

Species affected: All fowl, especially turkeys, chickens, game birds, and waterfowl, are susceptible.

Clinical signs: Staphylococcal infections appear in three forms—septicemia (acute), arthritic (chronic), and bumblefoot. The septicemia form appears similar to fowl cholera in that the birds are listless, without appetite, feverish, and show pain during movement. Black rot may show up in eggs (the organism is passed in the egg). Infected birds pass fetid watery diarrhea. Many will have swollen joints (arthritis) and production drops (see Table 3).

The arthritic form follows the acute form. Birds show symptoms of lameness and breast blisters, as well as painful

movement (see Table 3). Birds are reluctant to walk, preferring to sit rather than stand.

Bumblefoot is a localized chronic staph infection of the foot, thought to be caused by puncture injuries. The bird becomes lame from swollen foot pads (see Table 3).

Transmission: *Staphylococcus aureus* is soil-borne and outbreaks in flocks often occur after storms when birds on range drink from stagnant rain pools.

Treatment: Novobiocin (350 g/ton) can be given in the feed for 5–7 days. Erythromycin and penicillin can be administered in the water for 3–5 days or in the feed (200 g/ton) for 5 days. Other antibiotics and drugs are only occasionally effective.

Prevention: Remove objects that cause injury. Isolate chronically affected birds. Provide nutritionally balanced feed.

Table 1. Possible clinical signs for common respiratory diseases of poultry.

Clinical signs	Quail Bronchitis												
	pox ¹	Newcastle ²	IB ³	AI ⁴	coryza ⁵	LT ⁶	TRT ⁷	Chlamydiosis	SHS ⁸	MG ⁹	MS ¹⁰	MM ¹¹	Aspergillosis
Coughing	X	X		X		X		X	X	X		X	
Sneezing	X	X		X	X	X		X	X	X	X	X	
Shaking head					X	X		X		X	X		
Rales (abnormal breathing sound)	X	X	X	X	X	X	X	X	X	X	X	X	
Gasping	X	X	X	X		X		X	X	X			X
Discharge from eyes	X	X	X		X	X		X	X	X	X		
Nasal discharge		X	X		X	X		X	X	X	X		
Swelling of face and/or wattles		X		X	X	X	X	X	X	X	X		
Bluish-purple discoloration of face		X		X					X				X
Retarded growth	X	X			X			X		X	X	X	
Lameness										X			
General diarrhea		X		X	X	X		X		X			
Green, watery diarrhea		X						X		X	X		
Swollen joints										X			
Paralysis													X
Twisting of head and neck		X							X			X	X
Red/white spots on legs and comb				X									
Warts/scabs	X												
Conjunctivitis		X		X	X	X	X	X	X				
Prostration	X	X	X	X		X				X			

¹Fowl Pox

²Newcastle disease

³Infectious bronchitis

⁴Avian influenza

⁵Infectious coryza

⁶Laryngotracheitis

⁷Turkey rhinotracheitis

⁸Swollen head syndrome

⁹*Mycoplasma gallisepticum*

¹⁰*Mycoplasma synoviae*

¹¹*Mycoplasma meleagridis*

Table 2. Possible clinical signs for common nonrespiratory viral diseases of poultry.

Clinical Signs	Marek's disease	Lymphoid leukosis	Infectious bursal disease	Equine encephalitis	Avian encephalitis	Egg drop syndrome	Infectious tenosynovitis	Septicemia form
Reduced feed consumption			X	X	X			
Labored breathing	X							
Weight loss/stunted growth					X			X
Reduced water consumption			X		X			
Bluish-purple discoloration of the face								X
Enlarged abdomen		X						
Lameness	X						X	
Swollen joints							X	
Twisted necks				X				
Paralysis	X			X	X			
Inactive					X			
Tremors				X				
Incoordination	X			X	X			
Blindness	X							
Paleness	X							
Pale scaly combs	X							
Greenish diarrhea	X	X						
Diarrhea (general)				X		X		
Watery droppings			X					
Thin-shelled eggs						X		
Shell-less eggs						X		
Reduced egg production						X		X
Increased mortality								X
Dullness						X		
Weakness		X						
Emaciation		X						
Helicopter wings								X
Ruffled feathers			X					
Small comb		X						

Table 3. Possible clinical signs of nonrespiratory bacterial diseases of poultry.

Clinical signs	Fowl cholera	Omphalitis	Pullorum	Necrotic enteritis	Ulcerative enteritis	Botulism	Staphylococcus
Dead birds, no signs of disease	X						
Fever	X						X
Reduced feed consumption	X			X	X		X
Discharge from mouth	X						
Ruffled feathers	X				X		
Labored breathing	X		X				
Weight loss/stunted growth	X		X	X	X		
Lameness	X						X
Swollen joints	X						X
Abscessed wattles	X						
Swollen foot pads	X						X
Twisted necks	X						
Navel infection		X					
Dehydration		X					
Huddling of chicks			X		X		
Droopiness			X				
Diarrhea/pasted vent	X		X	X			X
White feces			X		X		
Blood in feces				X			
Paralysis						X	
Cyanotic							
Foul odor				X			X

Biosecurity: Protecting Your Livestock and Poultry

Biosecurity means doing everything you can to reduce the chances of an infectious disease being carried onto your farm by people, animals, equipment, or vehicles. It also means doing everything you can to reduce the chance of disease leaving your farm. Healthy herds and flocks contribute to the health of U.S. animal agriculture as a whole.

An outbreak of a foreign animal disease in the United States could seriously damage the domestic livestock and poultry industries. These animal diseases can have significant economic consequences from restrictions placed on the United States by its trading partners.

Losses from foreign animal disease outbreaks can also hit close to home with animal deaths, reduced productivity, as well as treatment, labor, and management costs and the loss of valuable genetic material from certain animals. The 2002–03 outbreak of exotic Newcastle disease in the United States resulted in the destruction of more than 4 million birds and cost taxpayers some \$170 million to eradicate. For producers and industry, the final result of a foreign animal disease outbreak is often reduced revenue and increased costs.

Keeping exotic or foreign animal diseases out of the United States is the responsibility of the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service's (APHIS) Veterinary Services (VS) program. Within VS, the Emergency Management and Diagnostics staff provides expertise on exotic animal diseases, ensures adequate disease surveillance within the United States, maintains a high level of emergency preparedness, and provides the needed resources to respond to and eliminate disease outbreaks in this country and its territories. In order to effectively protect against such outbreaks, VS needs the help of veterinarians, livestock producers, and State and local governments.

While it may not be possible for individuals to prevent a disease from arriving on our Nation's shores, biosecurity practices can reduce the risk of introducing a disease onto your farm or spreading it to neighboring farms.

An important first step is to identify some of the greatest risks for introducing disease to your farm.

Greatest Risks

1. Today's global marketplace gives more access than ever before to agricultural commodities from around the world. It also requires greater vigilance to ensure that imports and exports comply with international standards for trade. APHIS works to maintain clear rules for trade involving animals and animal products arriving in and leaving the United States. Unfortunately, illegal agricultural imports and smuggled prohibited products pose an ever greater threat on a daily basis. Through its various programs and laboratories, APHIS' diligence helps protect our country from foreign animal diseases.
2. On the farm, one of the greatest risks comes from bringing new animals onto your premises or commingling or exposing your animals to other animals. It is a common way to introduce new disease-causing organisms. As a rule of thumb, new animals and those who have been commingled or exposed to other animals should be segregated for 30 days.
3. Farm visitors can pose a risk, particularly if they have been on other farms with animals or have recently been in other countries with diseases exotic to the United States.
4. Farm equipment that has been in contact with livestock or manure can be a source of infection. Equipment should not be shared with other farms unless it has been thoroughly cleaned and disinfected before it reaches your property.

Common Sense Biosecurity Measures You Can Follow

The following do's and don'ts provide some basic tips for you to help prevent foreign animal disease outbreaks.

1. Keep Your Distance

Restrict access to your property and your livestock or poultry, and post a sign. Have one area where visitors can enter. Do not allow visitors near livestock or poultry unless absolutely necessary, and then make sure visitors have clean footwear (disposable boots work well) and clothes (supply these for them). Have an area where visitors can change clothes and provide shower-in, shower-out facilities if possible.

Discourage handling of animals by all visitors. Require and teach biosecurity to family, employees, and all visitors coming into, or involved with, your livestock or poultry production area.

2. Keep It Clean

You, your staff, and your family should follow biosecurity procedures for cleanliness. Wear clean clothes, scrub your shoes/boots with disinfectant, and wash hands thoroughly. Keep equipment and vehicles clean and insist that all machinery and vehicles must be cleaned before entering your property. Maintain programs to control birds and rodents that can carry and spread diseases.

3. Don't Haul Disease Home

If you, your family, or employees have been on other farms, at feed lots, petting zoos, auctions, or other places where there is livestock and poultry, clean and disinfect your truck or car tires and equipment before going home. If you have shown livestock or birds at a fair or exhibition, or are bringing in new animals, keep them separated from the rest of your herd or flock for 30 days after the event. Always change clothes and wash your hands before returning to your animals.

4. Don't Borrow Disease From Your Neighbor

Do not share equipment, tools, or other supplies with your neighbors or other livestock or poultry owners. If you do share these items be sure to clean and disinfect them before they reach your property.

5. Look for Signs of Infectious Diseases

You should know what diseases are of concern for your herd or flock and be on the lookout for unusual signs or behavior, severe illness and/or sudden deaths. When possible, assess the health of your animals daily. Early detection is important to prevent the spread of disease.

6. Report Sick Animals

Don't wait. Report serious or unusual animal health problems to your veterinarian, local extension office, or State or Federal animal health officials. USDA operates a toll-free hotline (1-866-536-7593) with veterinarians to help you. There is no charge for this service.

Safeguarding American Agriculture

Some dangerous foreign animal diseases you need to guard against include high pathogenicity avian influenza, foot-and-mouth disease, classical swine fever (hog cholera), swine vesicular disease, African swine fever, vesicular stomatitis, rinderpest, exotic Newcastle disease, and sheep pox.

You should contact your State department of agriculture to learn about plans in place in your State for handling foreign animal diseases.

Additional Information

For more information on how to protect your livestock and poultry from dangerous foreign animal diseases, contact:

U.S. Department of Agriculture
APHIS, VS, Emergency Management and
Diagnostics Program
4700 River Road, Unit 41
Riverdale, MD 20737-1231
Phone: (301) 734-5416
Fax: (301) 734-7817 or visit our
Web site at <http://www.aphis.usda.gov/vs>

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POULTRY REPRODUCTION

6



From Egg to Animal

Jeremy Case, UI Extension 4-H Program Assistant

Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will learn the fundamental concepts of genetics, sexual reproduction, and embryology.

Supplies

- Enough copies for the group of *Animal Reproduction and Genetics* (Handout 1)
- Pencils - enough for the group
- One dozen undeveloped chicken eggs
- Colored pencils
- Shallow bowls (petri dish) to catch eggs

Pre-Lesson Preparation

- Review *Animal Reproduction and Genetics* (Handout 1) to become familiar with the lesson content.

Lesson Directions and Outline

It's a known fact that poultry and other birds hatch from eggs, but have you ever thought about what is happening behind the scenes from start to finish so that the bird can hatch?

Reproduction is a process that produces the next generation of offspring for a species, either through sexual or asexual reproduction. Birds use sexual reproduction. A zygote is formed when the male gamete cell (sperm) fuses with the female gamete cell (egg) and grows inside the egg until it is mature enough to hatch. The egg is specially designed to provide food, water, nutrients, and the protection needed for the growing chick's development.

DNA (Deoxyribonucleic Acid), condensed into chromosomes by histone proteins, is the genetic material passed onto the offspring from both the mother and father. DNA determines the traits of the young bird as it grows both inside and outside the egg.

In this lesson, youth will explore basic genetics and embryology.

Conducting the Activity (DO)

Part A (~25–30 minutes)

1. Give each member a copy of *Animal Reproduction and Genetics* (Handout 1). Have each youth read a paragraph. Pause after each activity to recap and answer any questions.
2. Have the youth complete the Punnett Square assignment and Egg Parts activity in groups or partners.

Part B (~15 minutes)

1. Divide the members into groups of at least two and give each group a bowl and an egg.
2. Have each group carefully and slowly crack open their egg and place it in the bowl. The intent is to cause only minor damage to the eggshell and the contents.
3. Have the youth use their Egg Parts activity responses to identify all the parts of the egg as best as they can.

What Did We Learn? (REFLECT)

- What did you learn while doing these activities?
- What did you find most interesting about poultry reproduction or embryology?
- Did it surprise you how complicated eggs are?
- What are the four important factors of incubating eggs?

Why Is That Important? (APPLY)

- Why do we care about poultry reproduction?
- Why do humans breed and raise poultry more than other animals?
- Do you think other animals have reproduction cycles like poultry? Why or why not?

Resources

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<https://extension.psu.edu/science-of-incubation>.

National Wild Turkey Federation. 2021. "Wild Turkey Lifestyle and Breeding." *National Wild Turkey Federation*. <https://www.nwtf.org/content-hub/wild-turkey-lifestyle-and-breeding>.

Nicholas, Frank W., and Matthew Hobbs. 2013. "Mutation Discovery for Mendelian Traits in Non-Laboratory Animals: A Review of Achievements up to 2012." *Animal Genetics* 4(2): 157–70. [doi:10.1111/age.12103](https://doi.org/10.1111/age.12103).

O'Neil, Dennis. 1997–2012. "Probability of Inheritance." *Basic Principles of Genetics: An Introduction to Mendelian Genetics* (Palomar College, San Marcos, California). https://www2.palomar.edu/anthro/mendel/mendel_2.htm.

University of Illinois Extension. 1999. "Embryology Worksheets." University of Illinois Extension Incubation and Embryology. <https://web.extension.illinois.edu/eggs/pdfs/worksheets.pdf>.

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Animal Reproduction and Genetics

We all know that chickens, turkeys, and all birds hatch from eggs, but what might be going on inside the egg to make sure that the chick hatches? In order to understand this, we have to step back and take a deeper look at poultry reproduction and embryology.

Animals must reproduce to make sure that their species survives. Reproduction is a process that creates the next generation of offspring. Poultry and most animals use **sexual reproduction**. During this process the male **sperm** fuses with the female **egg** to produce a **zygote** that eventually grows into a chick. The mother and father pass on their **DNA**, or genetic information, on **chromosomes** that the chick inherits. Their DNA contains **genes** that determine the traits of the new chick and how it will grow, such as feather color or height.

A trait is a characteristic of an animal. These can range from hair color to height and many more! Each trait can vary, as a chicken could have many different colors for just feathers. A trait that has multiple variations is called an **allele**. Some alleles, like pea combs in chickens, have just two variations: **dominant** and **recessive**. Each parent gives one allele to the offspring so that they have two alleles. The **genotype** (the combination of alleles) determines the offspring's **phenotype** (how it will look)! Dominant alleles mask recessive alleles, and an animal with either one or two dominant alleles will show the dominant trait. An organism must receive two recessive alleles to show the recessive trait.

We can predict the likelihood of these traits with a Punnett Square. Each box represents a 25% chance since there are only four possible outcomes. Dominant traits are represented with a capital letter and recessive traits with a lowercase letter. The example below shows how to use a Punnett Square, where the dominant trait *black hair* is represented with a **B** and the recessive trait *white hair* is represented with a **b**.



This Photo by Unknown Author is licensed under CC BY-SA

Cross between BB and Bb

	B	b
B	BB	Bb
B	BB	BB

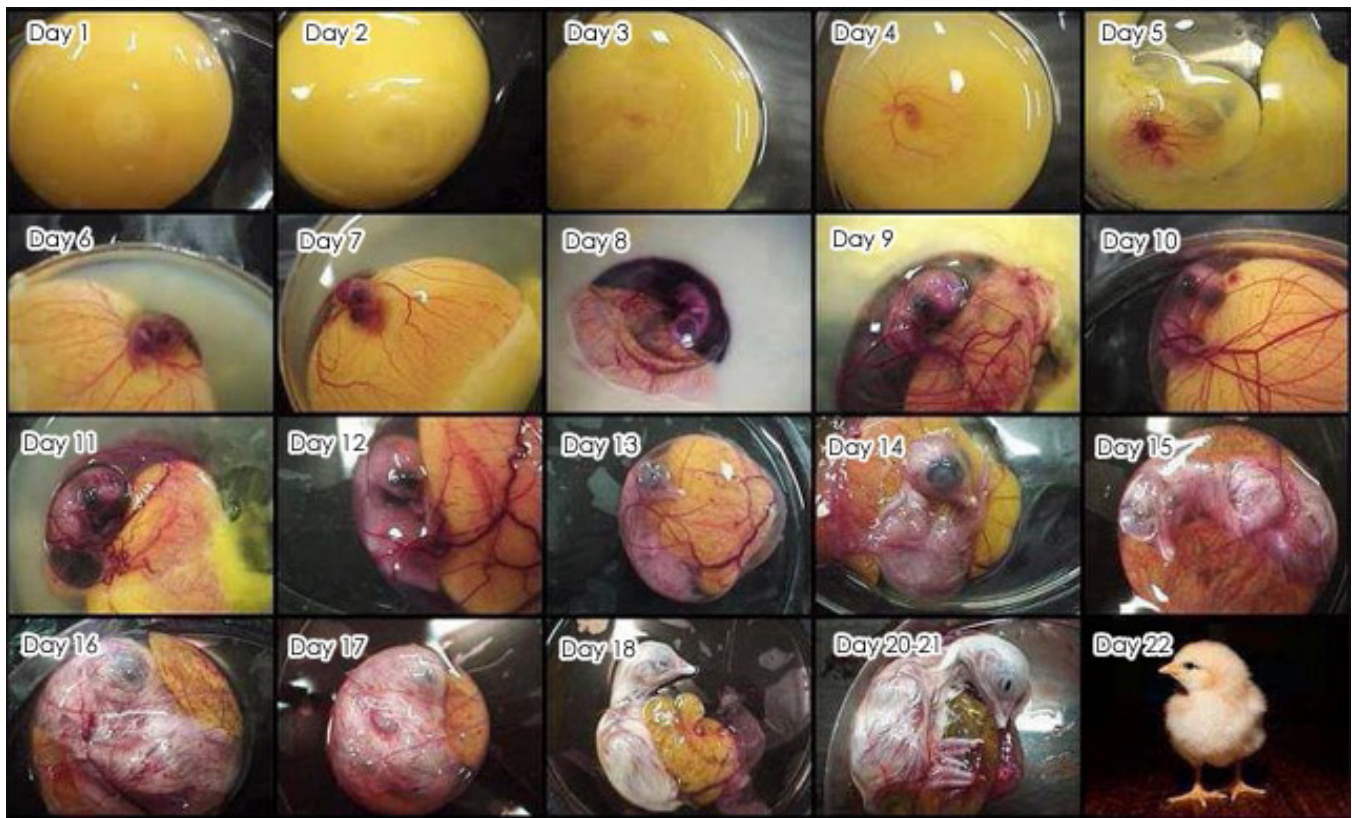
1. Separate the genes from both the mother and father into their own box.
2. Bring the trait down in each column and row.
3. Interpret your results. In this case, 100% of the offspring will have black hair.

Follow the example above to complete the Punnett Square for the pea comb chicken trait. The dominant allele of *has a pea comb* is represented with a capital **R**. The recessive allele of *doesn't have a pea comb* is represented with a lowercase **r**. Then, answer the questions.

Cross Rr with Rr

1. Does the offspring have a greater chance of having a pea comb? Why?
2. Is it possible to get offspring without a pea comb?
3. What do you think would happen to the Punnett Square if we changed the parent's genotype?

Reproduction and Genetics - Handout 1 |



Embryology is the study of how embryos develop. Once an egg is fertilized, the chick embryo will grow and eventually hatch. The incubation period is the time it takes for the chick to hatch. Incubation varies between species, as chickens have an incubation period of about 21 days and turkeys have an incubation period of about 26-28 days. The diagram above shows the embryonic development of a chicken.

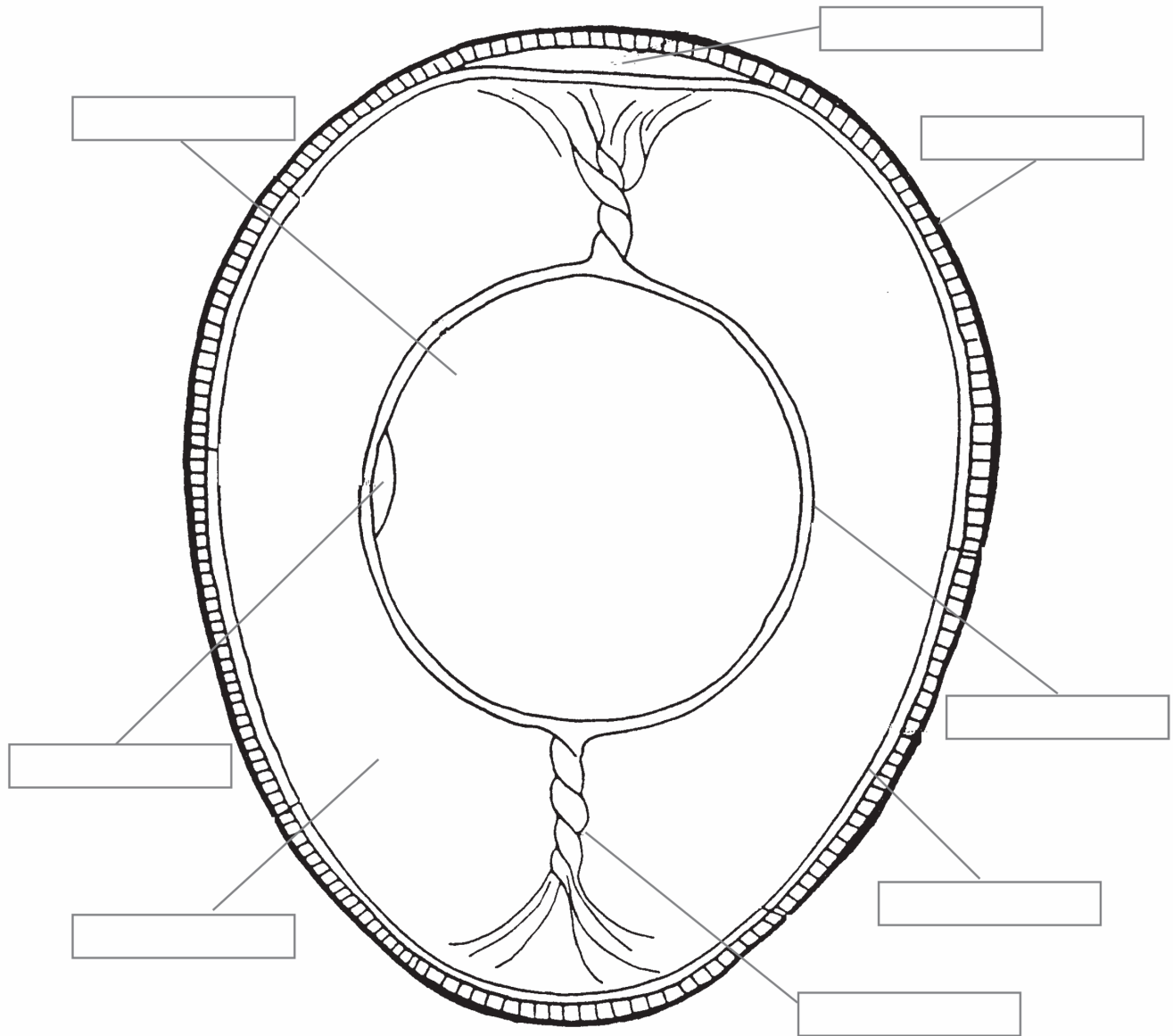
There are four important factors when incubating eggs: temperature, ventilation, humidity, and turning. Eggs can be incubated naturally with a hen or artificially with an incubator. If using an incubator, best settings are a temperature of 100°F, 60% humidity, and air movement of 12 ft³ per minute (Clauer). Turn the eggs three to five times a day until 3 days before they are expected to hatch.

During incubation, the egg provides protection and nutrition for the embryo to develop. There are many specialized parts of the egg that help the chick develop. The eggshell is porous, meaning it has lots of tiny holes that let air, moisture, and carbon dioxide in and out of the egg. The yolk and albumen (egg white) provide nutrients, and the chalazae and membranes help hold the embryo in place.

Color and label the worksheet on the parts of the egg. Ask your leader for help if you need it.

Egg Parts

Color each part of the egg a different color and label each part of the egg.



Use each word only once:

air cell
germinal disc
vitelline membrane

albumen or white
membranes
yolk

chalaza
shell

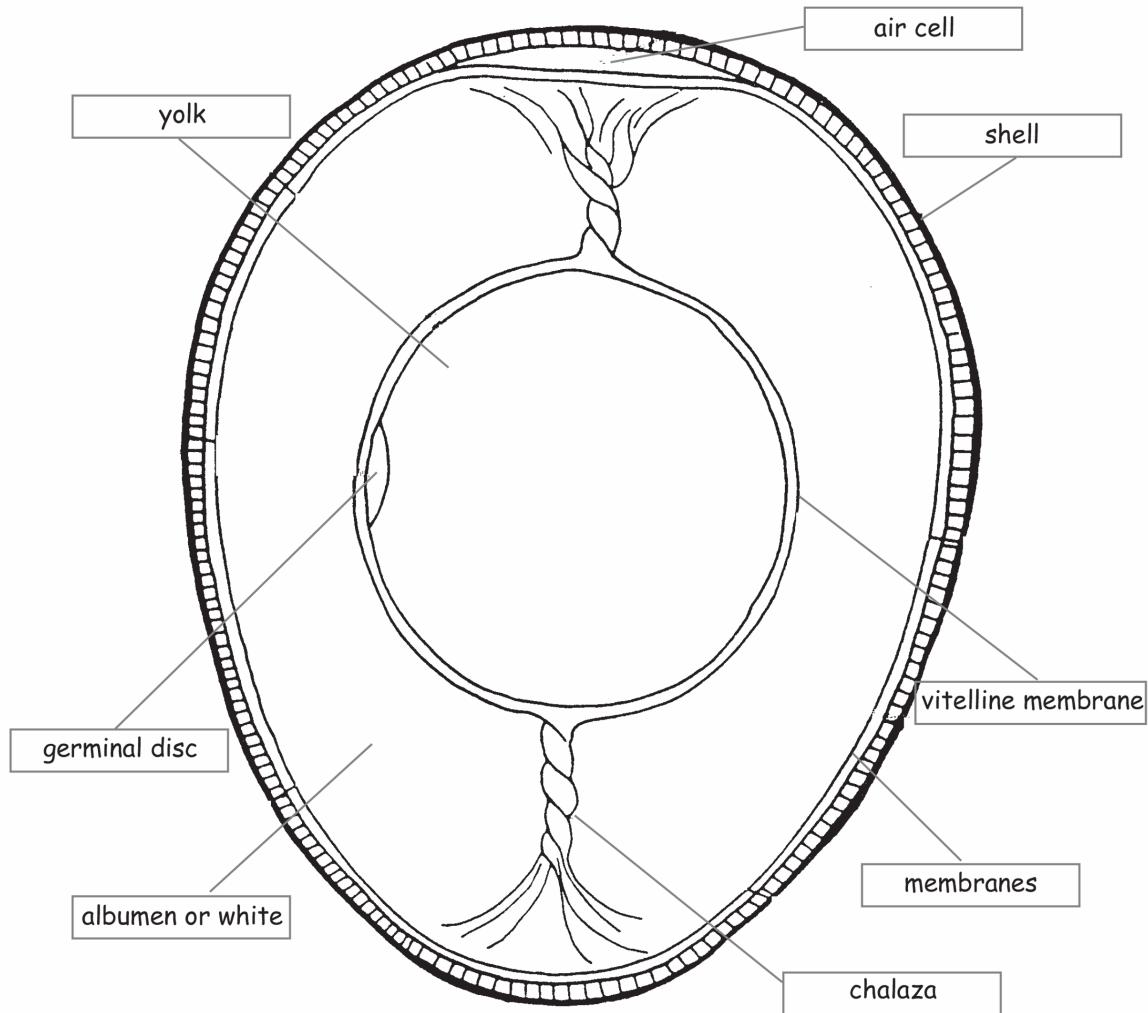


Answers to Worksheet

KEY

Egg Parts

Color each part of the egg a different color
and label each part of the egg.



Use each word only once:

air cell
germinal disc
vitelline membrane

albumen or white
membranes
yolk

chalaza
shell

This worksheet is a part of the Incubation and Embryology Project (<http://www.urbanext.uiuc.edu/eggs>). University of Illinois Extension, 1999.

CONFIRMATION & SELECTION





Are My Poultry Ready for the Fair?

Jeremy Case, UI Extension 4-H Program Assistant

Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will understand the ideal market chicken or turkey conformation and will practice selecting and placing poultry. Youth will also understand the importance of wing banding and identification.

Supplies

- Enough copies for group of *How to Select Poultry for Market Qualities* (Handout 1)
- Four copies per member of the *Broiler Score Sheet* or *Market Turkey Score Sheet* (Handout 2)
- Clipboards (optional)
- Pencils - enough for group
- Four penned, live chickens and/or turkeys

Pre-Lesson Preparation

- Review *How to Select Poultry for Market Quality* (this resource is part of this document) to become familiar with the rules of poultry conformation.

Lesson Directions and Outline

Have you ever had a really good piece of chicken or turkey? Why do you think its quality or taste was so good? It's likely due to the bird's structure and genetics.

The poultry industry feeds millions of people each day. In fact, according to the United States Department of Agriculture, broiler chicken is the most popular meat in the United States (Shahbandeh 2021). Because market poultry are in high demand, they're bred to grow quickly. To avoid complications,

such as broken hocks or legs, it's important that our poultry have proper conformation—or structure—to grow safely and to maximize production.

To avoid death loss and produce quality birds, we look for ideal conformation and pen uniformity (similar poultry in a pen) when selecting birds for market sale. In this module, youth will learn how to identify desirable and undesirable traits in poultry carcasses.

Conducting the Activity (DO)

Part A (~15–20 minutes)

1. Give each member a copy of *How to Select Poultry for Market Qualities* (Handout 1). Have each member read a section in the article. Pause after each section to lead a quick discussion about the section and answer any questions.

Part B (~20 minutes)

1. Once youth are somewhat familiar with ideal poultry conformation, introduce poultry judging. Discuss how an unideal physical characteristic is either a markdown or a disqualification, depending on its severity, as well as the importance of pen uniformity.
2. Pair up youth, preferably an older member with a younger member. Have members use the *Broiler Score Sheet* or *Market Turkey Score Sheet* (Handout 2) to judge each of the four poultry. They can use Handout 1 for reference. Each pair must place the class of birds first through fourth place. Use wing bands if individual birds aren't easily identifiable.

Part C (~10–15 minutes)

1. Once the members have finished judging the birds, have them return to the group.
2. Have the pairs take turns sharing their placings and reasons for why they placed the class the way they did using proper terms.

Part D (~5 minutes)

1. Ask the members if they had any difficulty identifying the birds. Depending on the birds on-site, this answer could vary.
2. Lead a discussion regarding the importance and challenges of identifying birds. Brainstorm ideas in addition to wing banding that can help identify market poultry.

What Did We Learn? (REFLECT)

- What did you learn while completing these activities?
- What did you find challenging about judging the birds? Did you like it or hate it?
- What are some complications you could encounter with poor poultry conformation?

Why Is That Important? (APPLY)

- Why is it important to have good conformation in market poultry?
- What could we do if we didn't have wing bands to identify birds?
- Where else do you think you could use these skills?

Resources

Clauer, P. J. n.d. "Standards for Broiler/Roaster Chicken and Young Turkey Pens." PennState Extension/Pennsylvania 4-H. <https://extension.psu.edu/programs/4-h/opportunities/projects/animal-science/poultry/raising-rearing/vi-market-poultry-pen-fact-sheets/standards-for-chicken-and-young-turkey-pens>.

PennState Extension. 2003. "Market Turkey Score Sheet (4-H Poultry)." *4-H Poultry (PennState Extension)*. See "Market Turkey Score Sheet" listed herein (Conformation and Selection, page 4).

Shahbandeh, M. 2021. "Per Capita Meat Consumption in the United States in 2020 and 2030, by Type." *Statista*. <https://www.statista.com/statistics/189222/average-meat-consumption-in-the-us-by-sort/>.



How to Select Poultry for Market Qualities

FLOYD Z. BEANBLOSSOM, EXTENSION POULTRY MARKETING SPECIALIST
 MARSHALL M. MILLER, ASSOCIATE EXTENSION POULTRY MARKETING SPECIALIST
The Texas A. & M. College System

4-H Club boys and girls show thousands of broilers and turkeys each year in local, county, district and state shows. They may be live-stock and poultry shows or in the poultry division of fairs held throughout the State. Most poultry is entered on the basis of market quality.

You should select the best possible exhibits from the poultry grown in connection with your project. To do this, you need to know the standards for Grade A poultry and the conditions that will lower the grade. In addition, you should know how to select exhibits that will be most competitive. In poultry judging contests, there are several classes of live and ready-to-cook poultry to be judged on the basis of market quality. Know and be able to identify the standards for each grade of poultry.

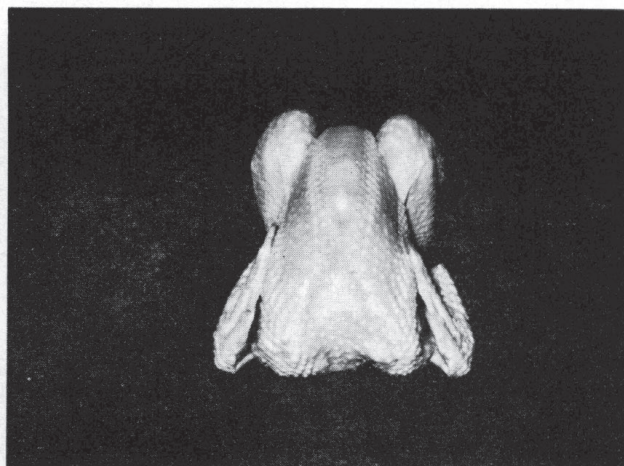
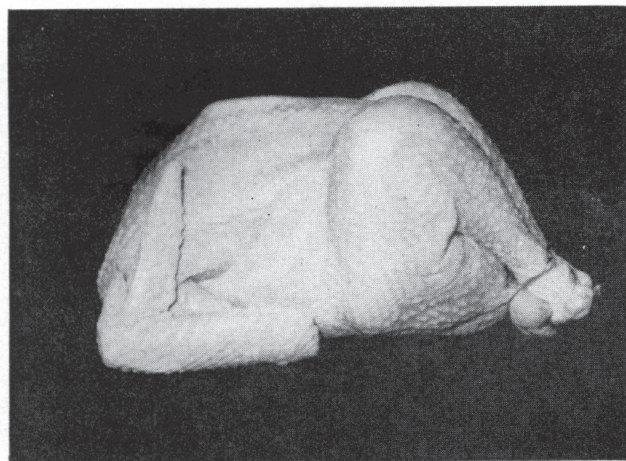
The following material will be helpful when judging in contests and making selection of exhibits. Study it carefully. Consult your 4-H Club leader and county extension agent also. When judging or selecting live birds, it is necessary to both feel and look for market qualities.

Body Conformation

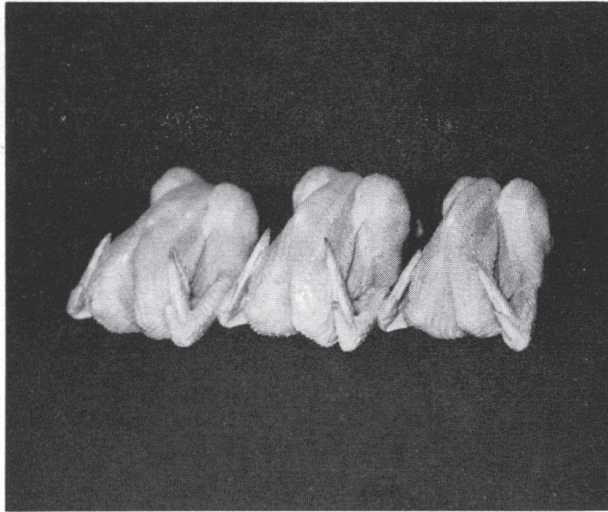
Dressing percentage and percent of meat to bone in the live and ready-to-cook carcass is largely influenced by body conformation. It is also a major factor in determining the grade. The relative width, length and depth of the body will influence body conformation. Poultry that have wide breasts, carrying the width the entire length of the keel; medium-length keels that are parallel with the back; broad and straight backs; thighs that are bulging; and heavy-meated drumsticks of medium length exhibit good body conformation.

Fleshing

Flesh is muscle tissue and has a large influence on the percentage of meat to bone and body conformation of the live bird or the ready-to-cook carcass. The breast of a grade A turkey is about 31 percent of the ready-to-cook carcass and for chickens, it is about 29 percent. The drumstick and thighs of turkeys and chickens of A quality are about 27 and 32 percent respectively.



BODY CONFORMATION: Side view shows body depth; also keel and back are parallel. Front view shows length and width of body. These characteristics determine body conformation.



GRADE: Broilers show variation in amount of fleshing. This alone may determine the grade. Produce and select broilers with grade A fleshing for exhibits and sale.

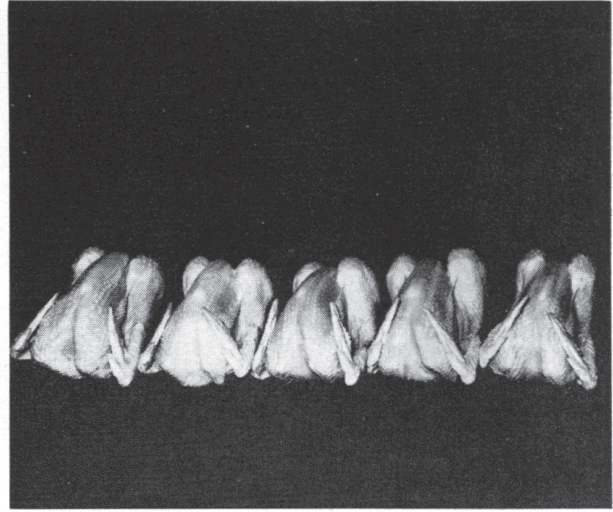
Flesh should be well distributed over the back. There is more likely to be a thick layer of flesh on the back when the breast and legs are fully fleshed, as indicated under "body conformation".

Finish

This has reference to fat. Chickens and turkeys should carry an abundance of fat but not to the extent that they have waste. Fat should be evenly distributed over the entire body. Fat of a light-cream or light-yellow color is usually preferred. It has eye appeal and consumer acceptance. Study the requirements for amount of fat needed for a bird to grade A, B or C. Well-finished poultry will have skin of a light-yellow or cream color. Poultry which have poor finish will have a bluish color. This information may be found on inside cover of Bulletin 234 "Market Demands on Turkeys" and Bulletin 904 "Market Demands on Broilers."

Uniformity

When selecting an exhibit of more than one turkey or chicken, such as 3 or 5 to be shown as a trio or pen, uniformity is a "must" if the exhibit is to furnish strong competition. The birds must be uniform in size, body conformation, fleshing, finish and all of the same sex. Do not try to select exceptionally large specimens, nor the smallest in the lot. Medium sizes usually are easier to select for uniformity and still be good specimens.



UNIFORMITY: Broilers are uniform in width and length of breast, depth of body, body conformation, weight, color and amount of fat over entire carcass.

Pin Feathers

Pin feathers may lower the grade of poultry. This is an important item in selecting the exhibit for a poultry show, fair or when selling commercial poultry on the market. It likewise is important for the Club member to remember when judging for market quality in contests.

Pin feathers are known as protruding and nonprotruding. Protruding pin feathers are those that are out from under the skin and the feather has not matured but may be partially fanned. An A quality ready-to-cook broiler or turkey must be free of protruding pins. Nonprotruding pin feathers are those that have not grown enough to come through the skin. These are more difficult to remove because they cannot be removed without injury to the skin of the carcass. An A quality ready-to-cook broiler or turkey must be practically free of these pins on the legs and all parts of the body.

Diseases

Poultry which show symptoms of disease usually are not in good show condition. Most shows have rules prohibiting their acceptance in the show. If they develop symptoms of disease after entering the show, they usually are disqualified and removed.

Most diseases cause a loss in quality and thus lower the grade of the individual bird afflicted. Be sure to look over the exhibit carefully for any sign of disease and select only those in good health.

External Parasites

External parasites such as blue bugs and lice lower the grade of poultry. Be careful to select an exhibit free of external parasites or damage caused from parasites.

The poultry from which the exhibit is to be selected should first be checked at regular intervals for several weeks before final selection, to be sure there is no infestation. If allowed to feed on poultry for many days, external parasites cause skin irritation, and results in discolorations on the ready-to-cook broiler or turkey.

Internal Parasites

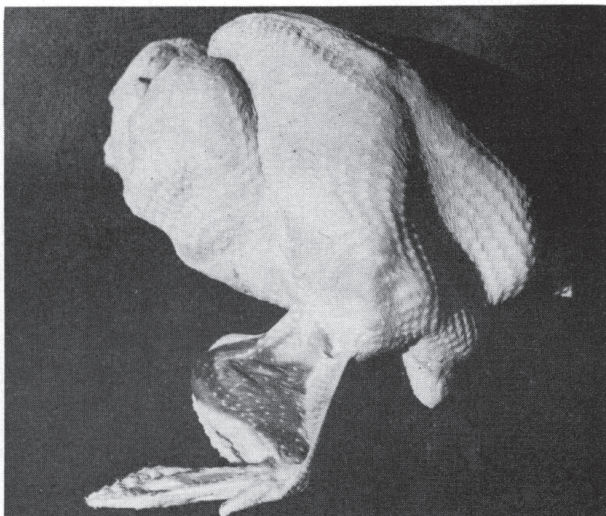
Internal parasites may cause poultry to lose flesh, finish, and cause poor development, thus lowering the grade. Such poultry usually will not be in show condition and likely will not pass the sifting committee.

Defects

One or more defects can reduce the market grade and in most cases are serious enough to cause poultry to be sifted at the show.

Some common defects are:

Curved breastbone	Crooked back
Crooked breastbone	Callouses
Hunch back	Blisters



BRUISES: Flesh and skin bruises may be caused any time before bleeding. Flesh bruises are most serious. Either may lower grade and thus lessen demand on product.

Torn skin
Dented breastbone

External parasites

Chickens or turkeys with any of these defects should not be selected for a show exhibit. Crooked toes generally are not considered a defect which lowers the grade.

Bruises

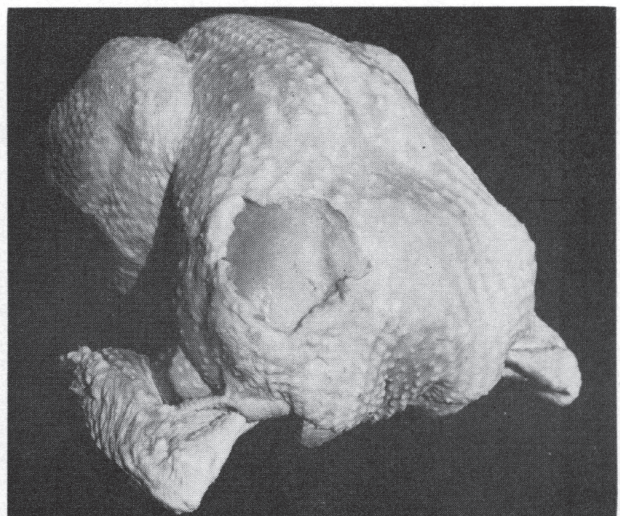
Bruises can be either skin or flesh. They always occur while the chicken is alive—never after it is bled. Rough handling, fighting or hauling in coops without ample litter to cushion and protect their breasts cause either skin or flesh bruises. The flesh bruise is most serious with respect to grade.

Disjointed Wing

Turkeys with the last joint of wing removed (commonly called wing clipping or notching) usually develop scabs, bruises or infection. These conditions usually reduce the grade of the turkeys affected. Such birds, even though they pass the sifting committee, show at a disadvantage.

Discolorations

These may be caused from flesh or skin bruises, hard scalding, external parasites and rough handling. See inside cover pages of Extension Bulletins 234 and 910.



TORN OR CUT SKIN: Requirements for A quality broilers and turkeys do not permit cuts or tears on breasts or legs and only limited amount for B quality.

ADDITIONAL HELPFUL SUGGESTIONS

Rules and Regulations

Read the rules and regulations of the show in which poultry is to be entered. Make sure the entries meet all requirements. If the rules state that all poultry must be of A quality, be sure each of the chickens or turkeys to be exhibited meet the minimum standards.

Dates are important. Give special attention to the closing entry date, time of arrival at show, judging, sale and release dates.

Selecting for Market Quality

Selection should be made for maximum market qualities in any choice made with reference to breed, variety, strain or cross. Some strains in certain breeds, varieties and crosses seem to win more in competition than others. This being true, there is greater chance of winning the top award if these strains, breeds and varieties are used. However, this fact does not reduce the importance of an excellent feeding program and good management. See L-402 "How to Produce Broilers for Show."

Before purchasing baby chicks or poults, consider the class of poultry for which exhibits are to be entered and consider the objectives to be attained. Consult your county agent or 4-H leader about this.

Summary

To keep poultry from being sifted at the show, avoid exhibits which have these defects: bare backs, pin feathers, breast blisters, crooked breasts, poor flesh and finish, external parasites, obviously knobby breast bone, or low vigor.

Remember that all these items are considered by judges when judging chickens or turkeys in the show, and should be considered by Club members who compete in judging contests. Consult county extension agent or 4-H Club leader when buying chicks or poults and selecting poultry exhibits. High market qualities in show poultry are greatly influenced by breeding, feeding and management.

References

The following publications give additional information on market qualities and defects of broilers and turkeys; also producing market quality:

- B-234 MARKET DEMANDS ON TURKEYS
- B-910 MARKET DEMANDS ON BROILERS
- L-123 MARKET ONLY WELL-FLESHED
AND WELL-FINISHED TURKEYS
- 4H-46 MARKET ONLY WELL-FLESHED
AND WELL-FINISHED TURKEYS

Broiler Score Sheet

Exhibitor's Name _____

Exhibitor's Number _____ **Jr.** _____ **Sr.** _____

	Bird #1	Bird #2	Bird #3	Bird #4
Confirmation:				
Breast (12)				
Depth				
Length				
Width				
Legs (3)				
Fleshing (5)				
Finish (3)				
Feathering (2)				
Healthy/Clean (5)				
Absence of Defects (10) blisters, bruises, sores, cuts, infected follicles, broken bones, manure burns, lice, other areas that lower show quality or carcass quality				
Total per bird				
Total All birds				
Pen Uniformity (15) Consistency within the pen, do the birds go together (weight, maturity level, color, health, etc.)?				
GRAND TOTAL (175 potential points)				

Revised July 2004

Market Turkey Score Sheet

Exhibitor's Name _____

Exhibitor's Number _____ **Jr.** _____ **Sr.** _____

Band ID:	Points	Score
Confirmation and Fleshing: Breast	30	
Legs	20	
Wings	5	
Back	5	
Finish	10	
Feather Score	5	
Condition *health, vitality, cleanliness	10	
Absence of Defects *bruises, blisters, sores, cuts, broken bones, manure burns, crooked keels, infected feather follicles, skin irritation, lice, etc.	15	
TOTAL	100	

Revised July 2003

EXHIBITTING ANIMALS

8



Fitting and Showing Poultry

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Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will learn ways to get their market birds ready for show as well as practice showmanship skills and poultry knowledge.

Supplies

- A copy of *4-H Poultry Fitting and Showmanship Member's Guide* for reference
- Enough copies for group of *4-H Poultry Showmanship Questions* (Handout 1)
- Enough copies for group of *Bathing and Grooming Poultry* (Handout 2)
- Live or stuffed chicken/turkey
- Table for showing practice
- Buckets or tubs of water
- Soap and toothbrush
- Towel or hair dryer
- Baby oil
- Poultry nail clippers
- Flashlight

Pre-Lesson Preparation

- Briefly review the species of interest in the *4-H Poultry Fitting and Showmanship Member's Guide* to become familiar with 4-H poultry showmanship and fitting.

Lesson Directions and Outline

When show day comes around, it's extremely important to prepare your birds properly for the

show. Though the process varies between people, the result should always be a clean, fitted bird that is ready for show.

Fitting poultry typically involves washing the birds, oiling their combs, and clipping their nails safely. (Tip: Use a light to see where the vein is.) Making your birds look the best they can is the highest priority, as bad appearances distract from the poultry's quality.

The poultry show doesn't just involve cleanliness of birds; it also tests your knowledge and handling of the bird in something called *showmanship*. In this module, youth will practice showing and fitting poultry.

Conducting the Activity (DO)

Part A (~5 minutes)

1. Have each youth practice holding and handling the bird. They should use proper techniques to ensure the safety of the handler and the bird.

Part B (~40 minutes)

1. As the leader, briefly demonstrate how to show the poultry of interest to the students. Adjust your depth and content of the demonstration according to the birds the youth own and plan to show.
2. Have each member practice showing the poultry at least once to you at the table. Guide them through the demonstration steps if they get lost and remind them that it's a learning experience.

- Once the member finishes their demonstration, use the *4-H Poultry Showmanship Questions* (Handout 1) to ask each youth a minimum of three questions to demonstrate what happens at a 4-H poultry show. Once everyone has shown and answered questions, give each member a copy of handout 1 to study before the show.

Part C (~15 minutes)

- Have the members work together to properly fit poultry. Depending on the size of the group, you might have to divide them into groups. Try to have no more than three or four in a group. Either a live or stuffed poultry can be used. (If a stuffed poultry is used, just mimic the process.)
- Give each member a copy of *Bathing and Grooming Poultry* (Handout 2) for reference during the activity. Youth should use two buckets or tubs, one for soapy water and one for rinse water. They should first gently scrub the poultry with soap and use a toothbrush to clean the scales/feet. After scrubbing, have them rinse the bird until no soap comes off. Dry with a towel or hair dryer.
- Once the bird is washed, help the youth apply baby oil to their bird's combs, wattles, and scales. This can be done with fingers or cotton balls. If the bird has long nails that curl over, have older members and/or volunteers hold the bird as the youth clip the bird's nails. Use a flashlight to shine underneath the nail to see where the vein is while clipping. **WARNING:** Do not cut close to the vein, as the bird will bleed and the nail could become infected.

What Did We Learn? (REFLECT)

- What did you learn while doing these activities?
- What did you find challenging about fitting and showing the birds?
- What are some ways we can improve our poultry knowledge?

Why Is That Important? (APPLY)

- Why is it important to have clean animals during show day?
- Where else do you think you could use these presentation skills?

Resources

Ellis, Lance T, and David D. Frame. 2014. *4-H Poultry Showmanship Questions*. University of Idaho Extension CIS 1206. <https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/Extension/4-H/Projects/CIS1206-Poultry-Showmanship-Questions.pdf>.

Varghese, S. 2017. *4-H Poultry Fitting and Showmanship Member's Guide*. Michigan State University Extension/4-H Youth Development 4H1520.

Miller, Lucinda B. "Bathing and Grooming Poultry." Ohio State University Extension. https://ohio4h.org/sites/ohio4h/files/imce/animal_science/Poultry/Bathing%20and%20Grooming%20Poultry.pdf.



4-H Poultry Fitting & Showmanship

Member's Guide



4-H Poultry Fitting & Showmanship Member's Guide

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Acknowledgments

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WELCOME TO 4-H POULTRY FITTING & SHOWMANSHIP

Congratulations on deciding to get involved in fitting and showing of poultry! This exciting aspect of working with birds allows you to show some of the skills not highlighted in other poultry contests. Poultry fitting and showmanship gives emphasis to both the bird and the person showing the bird.

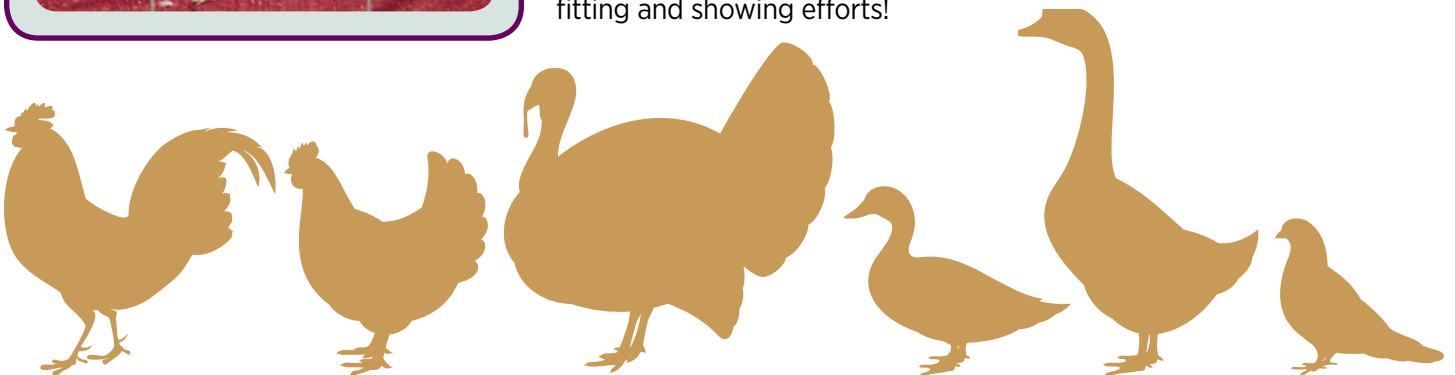


You may have many reasons for wanting to participate in fitting and showmanship contests. Perhaps you have a special interest in all aspects of raising poultry. Maybe you like the opportunity to compete in contests where being a good sport is valued. Maybe you want to use involvement to help educate those in the audience about various breeds and species of poultry. Whatever your reason, your main purpose should be to have fun while learning valuable skills you can use throughout your life.

Since poultry fitting and showmanship contests focus on the bird and you, both will be evaluated. The judge will evaluate your ability to select and care for the bird you show in the contest as well as your ability to demonstrate your knowledge of management, handling, posing and examining the bird. Throughout the contest, the judge will evaluate your skills, attitude and appearance. Fitting and showmanship contests also generally include a quiz as part of the competition.

Fitting and showmanship contests can vary from county to county. Some contests will divide contestants according to age levels (for example, junior, intermediate and senior). Other contests will divide contestants according to the number of years they have spent involved in the poultry project. Before competing, check with your 4-H leader, Michigan State University (MSU) Extension staff person or organization hosting the contest so you know what to expect.

This guide focuses on fitting and showmanship contests for 4-H'ers who work with chickens, turkeys, ducks, geese and pigeons. Perhaps you have an interest in only one of these species. Who knows? Maybe by learning about fitting and showing other species you'll decide you want to get involved in showing those birds too. This resource is your guide to what you need to know for fitting and showing these birds. If you want to know more about the various types of chickens, turkeys, ducks, geese or pigeons, or if you're interested in learning more about how to raise them, contact your 4-H leader or MSU Extension 4-H staff person. He or she can guide you to other helpful resources. Good luck in your fitting and showing efforts!



Fitting refers to the selection of a bird for show and the care of the bird before the contest including feeding, grooming and training. Fitting also applies to the general appearance of the person showing the bird. The information in this section gives an overview of what you need to know and do to be successful in the fitting part of a contest. Check the scorecards included at the end of each showmanship section to see the amount of emphasis placed on the fitting part of the contest.



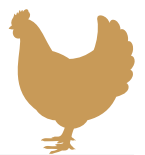
Choosing a Bird for Fitting and Showmanship

Whether you plan to show chickens, turkeys, ducks, geese or pigeons, keep these points in mind when you choose your bird:

- ▶ Check with your 4-H leader or knowledgeable poultry producer to see which breed is best for you. You should consider which size bird is best for your size, age and experience. Think about the effects of a bird's temperament or age on showmanship contests.
- ▶ When possible, don't choose birds that have obvious defects or disqualifications. Check the American Poultry Association's *American Standard of Perfection* for your bird's breed or variety to find out more about these defects or disqualifications. (Ask your 4-H leader or MSU Extension staff person how you can get a copy of this information.) However, if you have only one bird to work with, you should not get overly concerned with its defects, disqualifications or age.
- ▶ Choose your bird about 8 to 12 weeks before the contest so you have ample time to prepare the bird and train it for showing.
- ▶ Most importantly, look for a bird that will help you demonstrate your knowledge about birds and your ability to handle them.

Note: Using market poultry in showmanship competitions may have an effect on meat quality and is not advised.

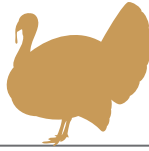
Some specific things to keep in mind relating to each bird species are as follows:



Chickens:

- ▶ Any breed of chicken is acceptable for showmanship, but stay away from breeds that tend to be flighty.
- ▶ If possible, choose an older chicken to work with. Younger birds tend to get excited more easily than older ones. However, meat-type birds can be shown anywhere from age 1 to 2 months and over depending on the class they belong to (Cornish game hens, broilers, roasters and others). It is advisable to talk with your 4-H leader or show staff to determine if birds entered in a market class are able to be used in showmanship classes at your local show.
- ▶ You may show either a hen or pullet (female) or a cock or cockerel (male). Select a hen if you want to determine past egg production performance.

Turkeys:



- ▶ Any variety of turkey is acceptable for showmanship. The most common varieties shown in contests are Broad Breasted Bronze and Broad Breasted Whites.
- ▶ A turkey used in a showmanship contest should be at least 16 weeks old.
- ▶ You may show either a hen (female) or a tom (male).

Ducks:



- ▶ Any domestic breed of duck is acceptable for showmanship. Ducks are classified into four classes according to weight:

Class:	Breed:
Heavyweight	Muscovy, Pekin, Aylesbury, Rouen, Saxony, Silver Appleyard
Medium Weight	Cayuga, Crested, Swedish, Buff
Lightweight	Runner, Campbell, Magpie, Welsh Harlequin
Bantam	Call, East India, Mallard, Mandarin, Carolina Wood, Mallard

Each of these breeds includes a number of different varieties of ducks.

- ▶ Keep in mind that some breeds can be flighty and difficult to train, while others are easily trained.
- ▶ The duck you show should be at least 4 months old, but you may show older ducks.
- ▶ You may show either a duck (female) or a drake (male).



Geese:

- ▶ Many breeds of geese are acceptable for showmanship. Like ducks, geese are classified into classes according to weight:

Class:	Breed:
Heavyweight	Toulouse, Embden, African
Medium Weight	Sebastopol, Pilgrim, American Buff, Saddleback, Pomeranian, Steinbacher



Class:	Breed:
Lightweight	Chinese, Tufted, Roman, Canada, Egyptian

Choose a breed that is known to have a suitable temperament to work with.

- ▶ Your goose should be at least 4 months old.
- ▶ You may show either a goose (female) or a gander (male).



Pigeons:

- ▶ You can choose from more than 300 varieties of pigeons for showmanship contests. When selecting a breed to raise, the breed's temperament and flight habits are an important factor. If you choose a performing breed, such as a Racing Homer, Tippler or Roller, you will need to pose it in a cage so the bird doesn't fly away from the show table. The Parlor Tumbler is an excellent breed for any showmanship contest because it cannot fly away. Other breeds you might consider are Fantails, Jacobins, Kings, Pouters and Modenas.
- ▶ Avoid selecting a pigeon that is less than 2 months old, but keep in mind that it's easier to train a younger pigeon than an adult pigeon. Avoid birds that are sitting on eggs or feeding young because they tend to be nervous and want to get back to the nest.
- ▶ You may show either a hen (female) or a cock (male).

Caring for Your Bird

Once you decide which bird to enter in the contest, you must give special attention to that bird in the areas of care and feeding. The first thing you may want to do is to separate the bird from any other birds. Go to a place where you can give it extra attention and where it receives more exposure to people. (You may even want to play loud music around the bird to get it used to noise.) By handling your bird often and providing exposure to other people, you may ensure a better performance during the actual contest.

As with any birds you own, be sure to provide the bird with a balanced diet so it is in good overall condition (body weight). If you need information on the proper diet for the types of birds you own, refer to your 4-H leader or to your local MSU Extension office staff.

Next to training (which is described on page 8 in “Training Your Bird”), the grooming of your bird is most important. Before the show, be sure to do the following grooming tasks:



8 to 12 weeks before the show:

If your bird has any broken or damaged feathers, pull them out carefully so new feathers will grow into their place by the date of the show. Keep in mind that sometimes it may take longer than 12 weeks for replacement feathers to grow back. Frequently check your bird for lice and mites so you can treat it ahead of time. Check around the head, vent area, on the legs and back, and under the wings. If you find lice or mites, treat the bird with a recommended lice and mite treatment (check with your local feed store, farm supply store or veterinarian for the type of treatment). *Be sure to follow directions on the label.*

3 to 5 weeks before the show:

Check again for external parasites and treat the bird if necessary.

3 to 5 days before the show:

Clean and groom your bird. You will need the following materials:

- ▶ Laundry tub with running water or two buckets
- ▶ Mild soap or whitening shampoo (for use with white birds only)
- ▶ Warm water
- ▶ Towels and soft cloths
- ▶ Old toothbrush
- ▶ Blow-dryer (optional)
- ▶ Nail clippers

Depending on how dirty your bird is, use these materials to either give it a bath or do some spot cleaning. Giving your bird a bath is probably a better idea. Remember that ducks and geese that are allowed to swim in a pond will stay fairly clean, but those kept in cages will probably need to be cleaned. Keep the following points in mind as you clean and groom your bird:

- ▶ To give your bird a bath, place it in a laundry tub or use two buckets (one filled with lukewarm soapy water and the other filled with lukewarm rinse water). Make sure the water level is below the bird's ears so the water doesn't get into its ears. Use a soft cloth to wash the feathers and an old toothbrush to scrub the bird's shanks,

toes and feet. Be sure to rinse the bird thoroughly. Remember that by giving your bird a bath ahead of time, the bird has time to recondition its feathers by preening. During the winter, keep the bird in a warm area to dry. You may want to use a blow-dryer to dry the bird. *Caution: Keep the blow-dryer away from any contact with water.*

- ▶ If the bird is not dirty and doesn't require a bath, you may just need to clean some of its feathers. Wash in the natural direction of the feathers lie. *Do not wash against the feathers.* Be sure to rinse the bird thoroughly.
- ▶ Dry the bird's feathers with a soft cloth or towels and a blow-dryer. Use the cloth or towels to remove most of the water before you begin blow-drying. After you finish drying the bird, keep it in a warm place until it is completely dry.
 - **Chickens:** If a chicken has tight feathers (for example, Leghorns), blow-dry in the direction of the feathers. If a chicken has fluffy feathers (for example, Cochins), blow-dry against the feathers.
- ▶ Use the toothbrush and warm soapy water to scrub the bird's feet, toes and shanks. Rinse and dry all parts thoroughly.
 - **Chickens:** Wash the comb, wattles and beak with a soft cloth.
- ▶ Using nail clippers, clip the bird's toenails if they are too long, but be careful not to cut them too short. Trim only the transparent part of the nails, a little at a time; otherwise, the nails might bleed.
- ▶ Trim the beak as needed by using nail clippers to align the top and bottom of the beak.

On the day before the show:

- ▶ Take time to apply a few final touches to make your bird look even better. Place a little mineral oil or petroleum jelly on a soft cloth and apply it to the bird's beak or bill, shanks and toes. Be careful not to apply too much oil or jelly. Do not apply it on the feathers.
 - **Chickens:** Also lightly apply the oil or jelly to the bird's comb and wattles.
 - **Pigeons:** For pigeons with "clean" legs (that is, with no feathers on the shanks or on the toes), apply the oil and jelly on the shanks and toes. For pigeons with "booted" legs (that is, with feathers covering the shank area only but not the toes), apply the oil or jelly on the toes and a little on the beak. Be careful not to get the oil or jelly on the feathers.
- ▶ After you are finished with cleaning, make sure the bird returns to a clean pen. Continue to keep the pen clean so the bird doesn't get dirty again.



Training Your Bird

You should work with your bird before the show for two reasons:

- ▶ First, it gets the bird used to the procedure, making it less likely the bird will be nervous during the contest.
- ▶ Second, it helps you improve your showing skills.

Try to begin training about 6 to 8 weeks prior to the contest.

To train your bird, provide a small table by the bird's cage. Each day, remove the bird from its cage and place it on the table for training. Don't feed the bird before this training. Instead, use food as a reward for its cooperation and posing each day during or after the exercises. During each training session, be sure to run through the posing steps (refer to the "Showmanship" section for each species of birds to see these steps). Try to get the bird to pose for a little longer period each time. You should also work through the handling and examination steps as well so you and the bird become comfortable with this part of the contest.

Transporting Your Bird to the Show

Transport the bird to the contest in a proper carrier. Make sure the carrier you use allows for plenty of ventilation. Put some bedding in the carrier to keep your bird clean. Place the carrier securely in the vehicle to transport to the contest.

Your Appearance at the Contest

Most fitting and showmanship contests have a dress code for contestants. This code can vary from county to county or from state to state, so be sure to review the rules of the show ahead of time so you're dressed appropriately. The proper attire may include neat pants and a light-colored, long-sleeved shirt or a show coat. Even if these are not mandatory, you may want to wear nice clothes to give a good impression to the judges. The primary rule is to be neat and clean.

Make sure to comb your hair properly and wear appropriate shoes. Refer to the section "Your Attitude and Behavior" on page 9 to learn more about how to conduct yourself.



SHOWMANSHIP

The showmanship part of the contest focuses on your ability to demonstrate your knowledge and skill of handling, posing and examining your bird. Throughout the contest, the judge will evaluate your skills, attitude and appearance. A quiz may also be part of the contest.



The steps for showing chickens, turkeys, ducks, geese and pigeons are included on pages 10 to 38. Photos of the steps are included in these sections.

At the end of each species section is the Michigan 4-H Poultry Showmanship scorecard that should be used during showmanship contests. Check with your 4-H leader or MSU Extension staff member ahead of time to learn about the point system your county uses.

Your Attitude and Behavior

During the contest, every eye will be on the participants, so act properly. Be alert and smile as you complete the various steps of showmanship. Look at the judge from time to time to make sure you have his or her attention. Be courteous to everyone during the contest. If the judge asks you questions, answer them politely. Use the word “sir” or “ma’am” when asking or answering questions. Be sure to be a good sport and congratulate your peers after the contest – no matter who wins.

If all the contestants perform the various steps of showmanship equally well, the judge must then consider attitude and behavior when scoring the contestants.

The Poultry Quiz

A quiz may be a part of the fitting and showmanship contest, usually given to each participant at the end of the contest. It tests participants’ knowledge about the particular species of poultry being shown and their general knowledge of poultry. The number and type of questions will depend on such things as contestants’ age division and the amount of time available. The quiz may be written or verbal. Contestants should be prepared for both.

To prepare for the poultry quiz, spend some time learning about the species of your bird and the breed of your bird as well as general poultry science and management principles. Check with your 4-H leader or county MSU Extension staff member for information resources that would be helpful.

Showing Chickens

In the showing part of the competition, you will be asked to remove your chicken from the carrier and take it to the assigned judging area. Judging may begin as soon as you are placed in the judging line.



Chickens: Figure 1



Chickens: Figure 2



Chickens: Figure 3

Handling and Posing the Chicken

Step 1: Entering the bird in the cage

Hold the chicken in front of you so the bird's head is facing you. Your palm should be under the breast area of the bird so that one thigh rests between your thumb and index finger and your remaining fingers wrap around the other leg and extend up the side of the body. Place your free hand on the bird's back to provide additional support.

When you reach the cage, release your hand from the top of the chicken to the open cage.

Turn the bird 180 degrees so that the bird faces the doorway of the cage (**Chickens: Figure 1**).

Slowly place the bird in the cage headfirst. Then turn the bird in a profile position for posing.

Step 2: Posing the chicken in the cage

Make sure the bird is in the profile before you begin posing the bird (**Chickens: Figure 2**). You may use a training stick for posing the bird. Touch the stick under the head area touching the wattles. The bird's head should be up and its neck should be fully stretched. The feathers should be tight and smooth. If you are using a stick, pose the bird with the stick to maintain the position. After your bird is posed, take a step back from the cage so the judge can evaluate your bird.

Step 3: Removing the chicken from the cage

When removing the chicken from the cage, always remove it headfirst (**Chickens: Figure 3**). Your hand should be over the bird's back and your other hand should be under the breast, with your fingers grasping the thighs.



Chickens: Figure 4

Step 4: Final pose

When you have removed the chicken from the cage, close the door, turn toward the judge and stand at attention. Stand steady with your free hand straight down at your side. The bird should face you while sitting in the palm of your hand (**Chickens: Figure 4**). The judge will release you from this pose after a proper examination.

Examining the Chicken

The examination section follows posing the bird. When the judge gives the command to examine your bird, perform the following steps to determine defects, disqualifications and the condition of your bird.

If your bird is a hen, be sure to examine it to determine its past egg production (pigment loss, handling quality, abdominal capacity and molt). If you would like more information on how to evaluate past egg production characteristics, check with your 4-H leader or county MSU Extension staff member.

Step 1:

Examine the head area. Let the bird rest in your hand while you use your free hand to examine the bird.



Chickens: Figure 5

- ▶ Look at both eyes to make sure they are not blind. Point your index finger at the eyes. (The bird should blink or move when pointed at.) Notice the pigment around the eye-ring (**Chickens: Figure 5**).
- ▶ Look for defects on the comb. Point your index finger at the comb. Also, feel the condition (texture) of the comb by holding the comb between your thumb and index finger (**Chickens: Figure 6**).
- ▶ Feel the texture of the wattles and look for any apparent abnormalities (**Chickens: Figure 7**).
- ▶ Examine the condition of the feathers on the head area for any sign of molting (**Chickens: Figure 8**).



Chickens: Figure 6



Chickens: Figure 7



Chickens: Figure 8



Chickens: Figure 9

- ▶ Look at the beak for any defects such as crookedness. Point your index finger at the beak. Also, examine the pigmentation of the beak (**Chickens: Figure 9**).
- ▶ Examine the color of the earlobes to see if they are true to the breed. (Refer to the American Poultry Association’s *American Standard of Perfection* for guidelines.) Point your index finger at the earlobes. Then locate the ear and point your index finger at it (**Chickens: Figure 10**).

Step 2:

Run your fingers over the neck area to feel for smoothness. Also, notice the condition for any sign of molting (**Chickens: Figure 11**).

Step 3:

Examine the back area. Run your hand over the back area to feel for any abnormalities. Use your hand to measure the length and breadth of the back area to check the conformation of the bird. Look at the under-color of the feathers on the back and check for any sign of molting (**Chickens: Figure 12**).

Step 4:

Run your hand down the bird’s tail. Press the tail feathers toward you and examine the condition of the feathers. You may want to count the tail feathers to determine any sign of molting (**Chickens: Figure 13**).

Step 5:

Examine the vent area. As the bird rests on your hand, tilt the bird downward so that the bird’s head is facing the ground and the vent area is toward you (**Chickens: Figure 14**). Look for lice and mites. If your bird is a hen, examine the condition of the vent to see if the hen is in laying condition. Also, look for pigmentation loss. With the bird in the same position, check the “handling quality” of the bird. This is one way used to determine past egg production. Determine by feeling the skin of the abdominal area for thickness or thinness. Pinch the skin below the vent



Chickens: Figure 10



Chickens: Figure 11



Chickens: Figure 12



Chickens: Figure 13



Chickens: Figure 14

area and roll it between your fingers to examine this. Also, at this time, feel the tip of the pubic bones for thickness and flexibility.

Step 6:

If your bird is a hen, measure the abdominal capacity. (Abdominal capacity is another way to determine the hens past egg production.) Use your fingers to estimate the distance between the two pubic bones (**Chickens: Figure 15**) and the distance between the end of the keel bone and the top of the pubic bones. These measurements will indicate the past egg production. In a standard large fowl hen, if the distance is approximately 1.5 inches or less, the bird is not laying at present and has probably not laid many eggs in the past. A distance over 1.5 inches indicates that the bird has laid eggs in the past and may be laying now. A distance of 2 inches or more indicates that the chicken has laid many eggs in the past.

Step 7:

Check the abdomen. If your bird is a hen, use your fingers to grasp the abdomen to determine its hardness or softness (**Chickens: Figure 16**). This will further indicate the bird's condition of egg production. A soft, pliable abdomen indicates the bird is currently producing eggs. A hard abdomen indicates that the bird is not producing at present or that the bird is a poor producer. Also, check the abdomen for any sign of molting and the condition of the feathers in this area.

Step 8:

Examine the thighs to determine the amount of meat present (**Chickens: Figure 17**). The thigh area is especially important in meat-type chickens.

Step 9:

Examine the shanks to see if they are clean and whether there are mites present (**Figure 18**). A crusty condition or upturned scales indicate that mites are present. Look at the pigment condition of the front and back of the shanks.



Chickens: Figure 15



Chickens: Figure 16



Chickens: Figure 17



Chickens: Figure 18



Chickens: Figure 19

Step 10:

Examine the toes (**Chickens: Figure 19**). Check the number of toes present. Remember that certain breeds have five toes. Look for defects on the toes and examine the pigmentation and the condition of the toenails.

Step 11:

Examine the feet. Look at the feet of a hen for pigment loss and correct color. Also, examine the feet for any defects (**Chickens: Figure 20**).



Chickens: Figure 20

Step 12:

Examine the breast. In meat-type chickens, the breast is the most important meat area. Use your palm to feel the length of the keel bone and the meat on it (**Chickens: Figure 21**). Check the straightness of the keel bone and look for any abnormalities such as indentations. Feel and look at the breast area to determine if there are any breast blisters or other defects on it.

Step 13:

Examine the wings. Open and stretch the left wing of the bird with your free hand (**Chickens: Figure 22**). Tilt the bird slightly away from you. Check the primary and secondary feathers for signs of molting. Take a closer look at the skin on the inside of the wing for lice and mites. Transfer the bird to your other hand. Follow the above directions using your free hand to examine the right wing.



Chickens: Figure 21

Step 14:

Examine the crop area. Feel it with your hands for any abnormalities (**Chickens: Figure 23**). It is better *not* to feed your bird on the morning of the showmanship contest so you avoid feed in the crop. If there is a great deal of feed in the crop, the bird will throw up when handled.

Step 15:

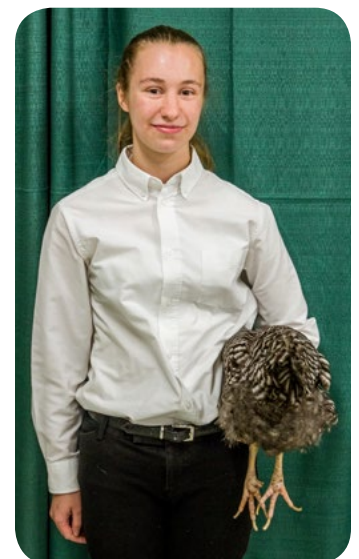
Return the bird to the upright position resting on your hand (**Chickens: Figure 24**). Give support on top with your other hand if necessary.



Chickens: Figure 22



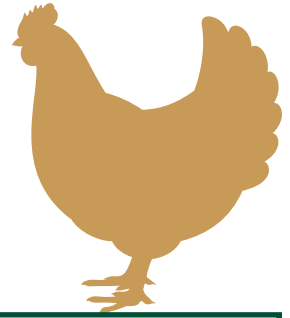
Chickens: Figure 23



Chickens: Figure 24

General Appearance of the Chicken

The judge will also consider your bird's general appearance, which refers to its production characteristics (meat, egg or fancy), feather condition, freedom from defects and general health. The breed characteristics should also be considered. The judge will examine each bird in a general way. This may not be a detailed examination due to a lack of time. However, the judge will thoroughly examine the fitting of the bird to determine how well you have cared for it.



Chicken Fitting and Showmanship Scorecard

Points Allowed

APPEARANCE & ATTITUDE OF SHOWPERSON (10 PTS) _____

- ▶ Keeps attention focused on bird and judge
- ▶ Follows judge's instructions
- ▶ Handles bird considerately
- ▶ Is considerate of other exhibitors
- ▶ Wears conventional clothing; has clean and neat appearance

APPEARANCE OF BIRD (10PTS) _____

- ▶ Is manageable; has evidence of training
- ▶ Is clean; shows evidence of fitting
- ▶ Has good body condition; appears healthy

SHOWMANSHIP (40 PTS) _____

- ▶ Holding bird prior to entry; bringing bird to the judge
- ▶ Caging and removing bird from cage
- ▶ Posing and presenting bird to judge
- ▶ Transferring bird to judge or another person
- ▶ Displaying, examining, finding or naming body parts

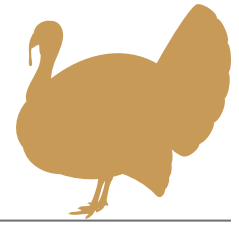
KNOWLEDGE OF BIRD (40 PTS) _____

- ▶ Age, sex, breed, variety and class of your bird
- ▶ Judge's Discretion – Remainder of questions may include any or all of the following:
 - The preparation of your bird for this show
 - Purpose of breed (exhibition/eggs/meat/dual purpose)
 - Defects and disqualifications for your breed and variety
 - Identification of strong and weak points of your bird
 - Other varieties in your breed; other breeds in your class
 - Your feed program
 - Your poultry health program; common diseases and parasites
 - Avian anatomy, including internal systems
 - Questions about other competitor's birds

TOTAL POINTS (100 PTS) _____

Showing Turkeys

In the showing part of the competition, you will be asked to remove your turkey from the carrier and take it to the assigned judging area.



Turkeys: Figure 1

Handling the Turkey

Since handling a turkey is not an easy task, working with your bird on a regular basis can help make it easier. The size of your bird in relation to your size is important because larger birds can be difficult to handle. You can handle a turkey in several ways when moving it from one place to another, but the following method is recommended:

Step 1:

Open the door of the cage.

Step 2:

Slowly walk the turkey to and from the show area. It is not recommended for youth to carry turkeys to and from the showing area (**Turkeys: Figure 1**).

Posing the Turkey

You will be given instructions by the judge to pose your turkey. Posing the turkey is done on an individual basis or as a group. You should begin by standing behind with your turkey already placed in a sideways profile (**Turkeys: Figure 2**).

Step 1:

Turn the turkey to the right so its head is facing the judge and pointing away from you.

Step 2:

Set the legs of the turkey about 6 to 9 inches apart (depending upon the size and age of the bird) on a straight line, when looking from the side.

Step 3:

Use a training stick, if you wish, or your index finger to touch the area beneath the lower beak to obtain proper carriage. At this time, the turkey should stretch out its neck as high as possible.

Step 4:

Set the wings properly over the body and tail.

Step 5:

Use the stick to set up the tail. Simply touch the stick under the tail feathers so the turkey will hold the tail tight and display a proper tail carriage as denoted by the American Poultry Association's *American Standard of Perfection*



Turkeys: Figure 2

Step 6:

Lightly run the show stick, or your hand, over the back of the bird's neck and continue to stroke downward. Continue to stroke over the tail area. Use one gentle stroke from the neck to the tail area.

Step 7:

Use your pointing finger or show stick under the beak and the palm of your free hand under the tail carriage to set the bird's position.

Step 8:

Stand behind the turkey slightly turned to the right and pose along with the turkey while watching the judge, keeping the judge in view at all times.

Step 9:

When the judge gives the command, stand in attention posture and look confident. The bird should remain in the "pose" position. If your bird moves a leg, immediately pick up the leg and set it back without disturbing the other birds in pose. If your turkey moves both of its legs, then you should reset the turkey, step back and wait for further instructions. You should *not* try to pose the bird again.

Examining the Turkey

The examination takes place after you have posed the turkey. When the judge gives the command to examine your bird, perform the following steps to determine conformation, fleshing, defects, disqualifications and overall condition of your bird. The examination steps begin with the turkey standing posed.

Step 1:

Stand back 2 to 3 feet away from the turkey and look the bird over for its balance and carriage (**Turkeys: Figure 3**).

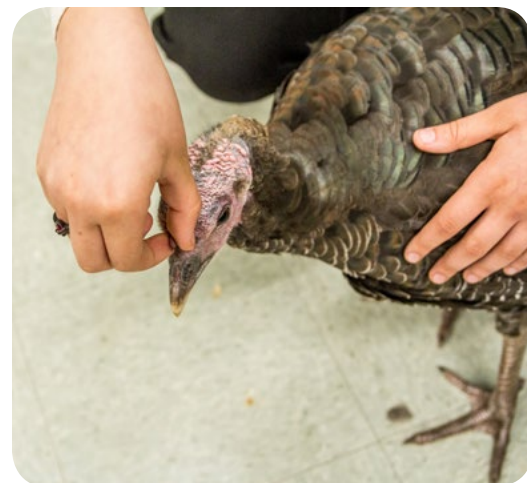
Step 2:

Examine the head area. Hold the bird in the standing position with one hand over its back. Use your other hand to examine the bird's head area (**Turkeys: Figure 4**).

- ▶ Examine the eyes. Check both eyes to make sure they are not blind. Point your index finger at the eyes. (The bird should blink or move when pointed at.) Notice the color and check for any signs of discharge.
- ▶ If the bird has a snood, examine it by feeling it. Check the texture. Determine if the snood is long or short. (Young birds may have a small snood.)
- ▶ Use your index finger to point at the beak. Check the top and lower beak for any defects such as crookedness.



Turkeys: Figure 3



Turkeys: Figure 4



Turkeys: Figure 5

- ▶ Examine the bird's crown (the area between each eye and ear). Also, point to each ear. Check for the development of caruncles (**Turkeys: Figure 5**).

Step 3:

Examine the bird's throat area to see if the throat wattles are developed. Feel the texture with your fingers. Also, check the development and color of the caruncles.

Step 4:

Examine the neck area for length, erectness and signs of molting (**Turkeys: Figure 6**).

Step 5:

Run your palm along the bird's back to feel the feathers and to check for any abnormalities. Check for roached back, the under-color of the feathers and signs of molting. Use your hand to measure the length and width of the back (**Turkeys: Figure 7**).

Step 6:

Examine the left wing and then the right wing. Open and spread the wings one at a time. Examine the primary and secondary feathers for signs of molting or for any damage. Check the condition of the covert feathers. Look under the wings for signs of lice (**Turkeys: Figure 8**).



Turkeys: Figure 6



Turkeys: Figure 7



Turkeys: Figure 8



Turkeys: Figure 9

Step 7:

Examine the tail to see if all tail feathers are present, to check the condition of the feathers and to look for signs of molting. Examine the tail carriage (**Turkeys: Figure 9**).

Step 8:

Examine the abdomen area. Check to see if the vent is visible and if there are signs of lice or mites. Also, check the condition of the fluff feathers. Use your finger to feel whether the abdominal area is soft or hard (**Turkeys: Figure 10**).

Step 9:

Examine the thigh area to determine its size and the amount of meat on the thighs and drumsticks. Keep in mind that the turkey is a meat bird (**Turkeys: Figure 11**).

Step 10:

Examine both legs for defects such as bowed legs or crooked toes. Examine the shank area for cleanliness, mites and spurs. Count the number of toes, and examine the nails and the feet for defects (**Turkeys: Figure 12**).

Step 11:

Examine the breast for size. Determine if it is entirely covered with meat and well-rounded or if the breastbone sticks out. Check to see if the keel (breast) bone is straight and long or short, dented or curved. Check the condition of the plumage on the breast. Determine if the breast plumage is molting. Check the length, width and depth of the breast.



Turkeys: Figure 10



Turkeys: Figure 11



Turkeys: Figure 12



Turkeys: Figure 13

Step 12:

Check the size of the turkey's rib cage. Count the number of ribs and check to see if they are placed well apart. Check the overall balance of the turkey (**Turkeys: Figure 13**).

Step 13:

Feel the crop to see if it is full or empty. Check for signs of a pendulous crop and crop infections.

Step 14:

Check to see if the turkey has a beard on the breast area. Check the beard's color and length.

Step 15:

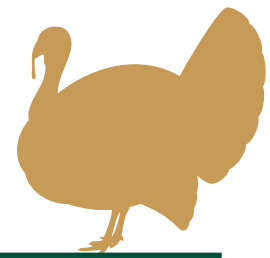
Step back so the judge can examine your bird for its condition.

Walking the Turkey

If the county or competition includes walking the bird in the showmanship contest, the judge will ask contestants to walk their birds one at a time. The others in the group will wait their turn.

General Appearance of the Turkey

The judge will also consider your bird's general appearance, which refers to its production characteristics (fleshing and conformation), feather condition, freedom from defects, general health and fitting. The judge will examine each bird in a general way. This may not be a detailed examination due to a lack of time. However, the judge will thoroughly examine the fitting of the bird to determine how well you have cared for it.



Turkey Fitting and Showmanship Scorecard (Not Including Walking)

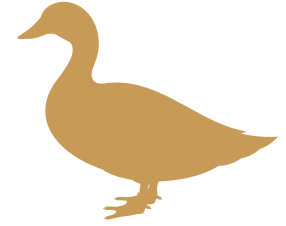
	Points Allowed
Handling the bird.....	20
Posing the bird	10
Examination of the bird.....	30
Condition of the bird	20
Poultry quiz	10
Appearance, attitude and behavior of participant	10
Appearance (5)	
Attitude (2)	
Behavior (3)	
Total points	100

Turkey Fitting and Showmanship Scorecard (Including Walking)

	Points Allowed
Handling the bird.....	20
Posing the bird	10
Examination of the bird.....	20
Walking the bird	10
Condition of the bird	20
Poultry quiz	10
Appearance, attitude and behavior of participant	10
Appearance (5)	
Attitude (2)	
Behavior (3)	
Total points	100

Showing Ducks

In the showing part of the competition, you will be asked to get your duck from the carrier and take it to the assigned area. Remember that you and the bird will be judged from this point on. All the directions for showing are from right-handed contestants. Left-handed contestants should use the opposite hand from that noted in the steps.



Ducks: Figure 1

Handling the Duck

Step 1:

Handle the legs of waterfowl with extreme care. Hold the duck with one hand under the breast giving support to its weight and at the same time grasping the legs together. Your thumb should be outside one leg and your index finger should be between the duck's legs. Use your remaining fingers to grasp the other leg of the duck at the thigh area.

Step 2:

Hold your other hand over the back of the duck to prevent it from trying to escape. (**Ducks: Figure 1**)

Step 3:

Hold the duck right in front of you. The head of the duck should be close to your body, with its tail away from your body. (**Ducks: Figure 2**)

Posing the Duck in the Cage

When it is your turn to pose the duck in the cage, do the following:

Step 1:

Release your hand over the duck to open the cage.



Ducks: Figure 2



Ducks: Figure 3

Step 2:

Turn the duck around to place the head of the duck in the cage first (**Ducks: Figure 3**).



Ducks: Figure 3



Ducks: Figure 5



Ducks: Figure 6

Step 3:

Turn the duck back toward you and pose the bird in the profile position (**Ducks: Figure 4**). Use a training stick if you wish under the duck's lower bill so the duck will stretch out its neck. Make sure the legs are spread apart on a straight line and that the bird stands erect in this pose.

Step 4:

Stand with your duck in the posed position. Take a step back and stand at attention with your arms at your sides.

Removing the Duck and the Final Stand

When the judge gives the command to "remove your duck," reach into the cage and remove the duck properly.

Step 1:

Place one hand under the duck's breast so your fingers can grasp the legs together. Place the other hand on the duck's back.

Step 2:

Remove the bird, head first, close the cage door and take a step backward.

Step 3:

Stand at attention with the bird in your hand. When the judge gives you the command move from this area to the area where the duck will be judged.

Examining the Duck

The examination section follows posing the bird. When the judge gives the command to examine your duck, perform the following steps to determine defects, disqualifications and the condition of your duck.

Step 1:

Examine the duck's head area. Let the bird rest in your hand while you use your free hand to examine the bird (**Ducks: Figure 5**).

Step 2:

Look at the duck's eyes to check their size and color and to observe for blindness. Point your index finger at both eyes (**Ducks: Figure 6**). (The bird should blink or move when pointed at.)



Ducks: Figure 7

Step 3:

Examine the bill to determine its color and shape. Look to see if the color of the bill is true to the breed or sex (**Ducks: Figure 7**).

Step 4:

Examine the bird's head to see if it follows its breed standard. Also, check to see the prominence of the bird's cheeks and the condition of the head plumage. If the duck has a crest, point your finger at it (**Ducks: Figure 8**).

Step 5:

Examine the bird's neck area for length and strength (ducks generally have long necks). Check the arch of the neck. Examine the feather condition of the neck for abnormal coloring (**Ducks: Figure 9**).

Step 6:

Use the palm of your hand to run over the duck's back to determine its length and width. Meat variety ducks will have a long and wide back. Check the back feathers for the under-color and for signs of molting or missing feathers (**Ducks: Figure 10**).

Step 7:

Slowly tilt the duck downward so you can examine the tail area. Check to make sure all tail feathers are present. Also, look for curled feathers (**Ducks: Figure 11**). (An adult drake will have curled sex feathers in the middle of the tail feathers.)



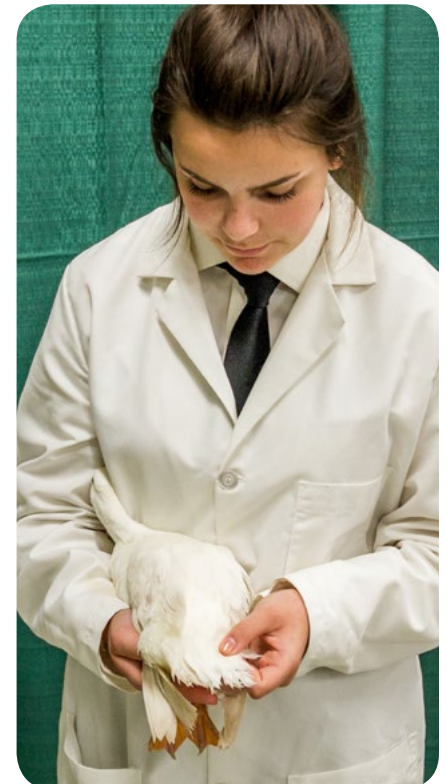
Ducks: Figure 8



Ducks: Figure 9



Ducks: Figure 10



Ducks: Figure 11



Ducks: Figure 12

Step 8:

Check the abdominal area and look for the vent opening. Note: Steps 9-11 are important for determining a female duck's past egg production qualities (**Ducks: Figure 12**).

Step 9:

Use your fingers to examine the spread of the pubic bones (**Ducks: Figure 13**).

Step 10:

Use your fingers to examine the space between the rear of the keel bone and the pubic bone (**Ducks: Figure 14**).

Step 11:

Examine the abdomen area for the duck's trimness (leanness) or hardness. Also, examine the feather condition in this area (**Ducks: Figure 15**).

Step 12:

While the duck is still in the tilt position, pull each leg gently to check for straightness (**Ducks: Figure 16**).

Step 13:

Examine the shanks of the legs for cleanliness, color and abnormality.



Ducks: Figure 13



Ducks: Figure 14



Ducks: Figure 15



Ducks: Figure 16



Ducks: Figure 17

Step 14:

Examine the toes. Check the toenails for color and length. Look to see if any are missing (**Ducks: Figure 17**).

Step 15:

Examine the webs of both feet for damage, abnormalities and parasites.

Step 16:

Examine the foot for abnormalities and abscesses.

Step 17:

Examine the breast area. Check the length of the keel (breast) bone (**Ducks: Figure 18**). Examine this area for any defects such as a dented keel bone. Also, check the feather condition and the amount of meat on the breast area. (Keep in mind that this is important for meat birds.)

Step 18:

Examine the wings by spreading each one open. Look at the condition of the primary and secondary feathers and coverts (the feathers covering the bases of the primary wing feathers). Also, check for signs of molting (**Ducks: Figure 19**).

Step 19:

Examine the crop for fullness and abnormalities (**Ducks: Figure 20**).

Step 20:

Step back so the judge can examine your bird for its condition.



Ducks: Figure 18



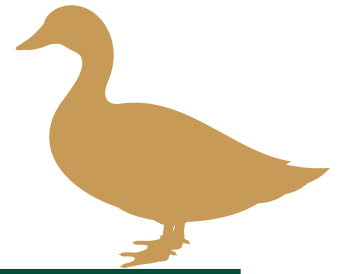
Ducks: Figure 19



Ducks: Figure 20

General Appearance of the Duck

The judge will also consider your bird's general appearance, which refers to its meat and egg production qualities, defects, disqualification points, plumage condition and general health. The judge will examine each bird in a general way. This may not be a detailed examination due to a lack of time. However, the judge will thoroughly examine the fitting of the bird to determine how well you have cared for it.



Duck Fitting and Showmanship Scorecard

Points Allowed

APPEARANCE & ATTITUDE OF SHOWPERSON (10 PTS) _____

- ▶ Keeps attention focused on bird and judge
- ▶ Follows judge's instructions
- ▶ Handles bird considerately
- ▶ Is considerate of other exhibitors
- ▶ Wears conventional clothing; has clean and neat appearance

APPEARANCE OF BIRD (10PTS) _____

- ▶ Is manageable; has evidence of training
- ▶ Is clean; shows evidence of fitting
- ▶ Has good body condition; appears healthy

SHOWMANSHIP (40 PTS) _____

- ▶ Holding bird prior to entry; bringing bird to the judge
- ▶ Caging and removing bird from cage
- ▶ Posing and presenting bird to judge
- ▶ Transferring bird to judge or another person
- ▶ Displaying, examining, finding or naming body parts

KNOWLEDGE OF BIRD (40 PTS) _____

- ▶ Age, sex, breed, variety and class of your bird
- ▶ Judge's Discretion - Remainder of questions may include any or all of the following:
 - The preparation of your bird for this show
 - Purpose of breed (exhibition/eggs/meat/dual purpose)
 - Defects and disqualifications for your breed and variety
 - Identification of strong and weak points of your bird
 - Other varieties in your breed; other breeds in your class
 - Your feed program
 - Your poultry health program; common diseases and parasites
 - Avian anatomy, including internal systems
 - Questions about other competitor's birds

TOTAL POINTS (100 PTS) _____

Showing Geese

In the showing part of the competition, you will be asked to remove your goose from the carrier and take it to the assigned judging area.



Geese: Figure 1



Geese: Figure 2

Handling the Goose

Since handling a goose is not an easy task, working with your bird on a regular basis can help make it easier. The size of your bird in relation to your size is important because larger birds can be difficult to handle. You can handle a goose in several ways when moving it from one place to another, but the following method is recommended:

Step 1:

Open the door of the cage.

Step 2:

Slowly walk the goose to and from the show area. It is not recommended for youth to carry geese to and from the showing area.

Examining the Goose

The examination section follows posing the goose. The goose should be standing. When the judge gives the command to examine your goose, perform the following steps to determine defects, disqualifications and the condition of your goose.

Step 1:

Examine the goose's head area (**Geese: Figure 1**).

Step 2:

Point your index finger at the eyes to check them for size, color and blindness. (The bird should blink or move when pointed at.)

Step 3:

Examine the bill for length, width, shape, color and knob (if present). Determine if the color of the bill is true to the breed or sex.

Step 4:

Examine the head for size and shape. Check the head plumage. Check the size of the dewlap (if present) under the goose's beak.

Step 5:

Examine the neck area for length and strength. Geese generally have strong necks, especially the African and the Chinese breeds. Check to see if the neck is arched, and examine the neck feathers for condition of molting and other abnormalities (**Geese: Figure 2**).



Geese: Figure 3



Geese: Figure 4



Geese: Figure 5

Step 6:

Use the palm of your hand to run over the goose's back area. Check the back's length and width. Heavy breeds will have long and wide backs. Check the back feathers for the under-color and for signs of molting or missing feathers. Make sure the color of the plumage is true to its breed.

Step 7:

Examine the goose's tail feathers to see if they are all present (**Geese: Figure 3**).

Step 8:

Use your fingers to push the tail feathers aside to look for the vent.

Note: Steps 9 and 10 are important in a female goose to determine the past egg production qualities.

Step 9:

Use your fingers to measure the spread of the pubic bones.

Step 10:

Use your fingers to measure the space between the rear of the keel bone and the pubic bone. Check to see if the abdominal area is hard or soft and pliable.

Step 11:

Examine the feather condition of the abdominal area (**Geese: Figure 4**).

Step 12:

Examine the amount of flesh on the thigh area (**Geese: Figure 5**).

Step 13:

Examine the shank of the legs. Check for cleanliness, color and abnormalities (**Geese: Figure 6**).



Geese: Figure 6



Geese: Figure 7

Step 14:

Examine the toes, and check the color and length of the toenails. Also, check to see if any toenails are missing.

Step 15:

Examine the webs on both feet for tears, abnormalities and parasites (**Geese: Figure 7**).

Step 16:

Examine the goose's feet for abnormalities and abscesses (**Geese: Figure 8**).

Step 17:

Examine the breast area. Check the shape and length of the keel bone. Also, check the feather condition and the amount of meat on the breast area. Keep in mind that this is important for meat breeds (**Geese: Figure 9**).



Geese: Figure 8

Step 18:

Spread each wing open and look at the condition of the primary and secondary feathers and coverts (the feathers covering the bases of the primary wing feathers) for signs of molting. Look for any external parasites on the skin area of the wings (**Geese: Figure 10**).



Geese: Figure 9



Geese: Figure 10



Geese: Figure 11

Step 19:

Examine the crop for size, fullness and abnormalities.

Step 20:

Step back so the judge can examine your bird for its condition (**Geese: Figure 11**).

General Appearance of the Goose

The judge will also consider your bird’s general appearance, which refers to its production characteristics (egg or meat), feather condition, freedom from defects and general health. The judge will examine each bird in a general way. This may not be a detailed examination due to a lack of time. However, the judge will thoroughly examine the fitting of the bird to determine how well you have cared for it.

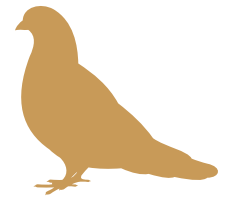


Goose Fitting and Showmanship Scorecard

	Points Allowed
Handling the bird.....	25
Posing the bird	10
Examination of the bird.....	25
Condition of the bird	20
Poultry quiz	10
Appearance, attitude and behavior of participant	10
Appearance (5)	
Attitude (2)	
Behavior (3)	
Total points	100

Showing Pigeons

In the showing part of the competition, you will be asked to remove your pigeon from the carrier and take it to the assigned judging area.



Pigeons: Figure 1



Pigeons: Figure 2

Posing the Pigeon in the Cage

Step 1:

Carry your pigeon and walk toward the pigeon cage, which is set for your contest (**Pigeons: Figure 1**).

Step 2:

At the judge's command, use one hand to open the cage. Turn the pigeon toward the place it in the cage head first. Then turn the pigeon toward you and get ready for posing. Close the door of the cage (**Pigeons: Figure 2**).

Step 3:

To pose the pigeon, use the show stick and touch the pigeon at the breast area (**Pigeons: Figure 3**). If necessary, touch the wings of the tail area so the pigeon will come to pose. At the posed position, the pigeon should stretch out its neck and be alert with its head straight, wings tight, primary feathers over the tail (except in Fantail and Indian Fantail breeds), tail feathers tight and legs both on a straight line. If necessary, touch the show stick to different parts of the body to get them into desired postures. If breeds such as the Jacobin are used for show, the "ornaments" such as the crest and crown should be displayed in such a manner that the bird will distinctly show the different parts. Different breeds of pigeons have different postures in a "standing" pose that need to be obtained at the "pose posture." The Fantail breed will spread its tail well, rather than holding tight. This breed will continuously move by shaking its head in a back and forth motion. You should stand alert with the pigeon, touching the stick at the breast area.



Pigeons: Figure 3



Pigeons: Figure 4

Step 4:

At the judge's command, take a step back and stand at attention with your arms at your sides (**Pigeons: Figure 4**). At this point, the judge will look at both you and the pigeon. Keep looking at the judge in a confident manner. If the judge moves around, turn your head to maintain eye contact. However, do not move the rest of your body.

Step 5:

At the judge's command, open the cage with one hand. Use your other hand to grasp the bird and remove the bird from the cage. Always bring it out headfirst. After removing the pigeon, stand at attention, with one or both hands holding the bird (**Pigeons: Figure 5**).

Examining the Pigeon

This part of showing takes place after you have posed the pigeon. When the judge gives the command "Examine your bird," perform the following to determine conformation, defects, disqualifications and overall condition of your bird.

Step 1:

Hold the pigeon in front of you in your hand, making sure both flight feathers are over the tail area. The pigeon's head should be in front of you and its tail away from you. Both its legs should be folded backward (**Pigeons: Figure 6**).

Step 2:

Point your index finger at each eye and observe it closely for defects, blindness, swelling, color and signs of disease. (**Pigeons: Figure 7**). Check to see if there is a difference in the colors of the irises and if the color is true to breed. Pigeon breeders look carefully at the eyes, which give hints about the quality of the bird, especially in performing



Pigeons: Figure 5



Pigeons: Figure 6



Pigeons: Figure 7



Pigeons: Figure 8

breeds such as racing homers. Look for red pigments in the birds with white irises. Pigeon breeds commonly have white irises, but sometimes they are yellow, orange and black, or almost completely black. Check the eye ceres to see if they are normal for the breed. Eye ceres in certain breeds will be large and ornamental.

Step 3:

Use your hand to examine the pigeon's head area. Point your finger at its beak and look for defects (**Pigeons: Figure 8**). Look at the size and color of the beak for trueness to breed. Certain breeds, such as Owl and Frill, have very small beaks. Other breeds have enlarged nostrils, which are one of the ornaments of the breed called beak or nostril ceres.

Step 4:

Examine the crown (top skull) area of the head (**Pigeons: Figure 9**). Check its shape and plumage, and look for signs of molting.

Step 5:

Check the shape of the back skull to see if it is true to the breed or sex (**Pigeons: Figure 10**).

Step 6:

Check to see if there is a crest (ornament) on the head and determine if the type of crest is true to the breed.

Step 7:

Point to the ear opening on each side of the face beneath the eyes. Look for ear feathers (**Pigeons: Figure 11**).



Pigeons: Figure 9



Pigeons: Figure 10



Pigeons: Figure 11



Pigeons: Figure 12

Step 8:

The neck area consists of nape, throat or bib region, and the neck blend (hackle). Feel the neck area by grasping the neck softly with your hand. Examine the plumage condition to look for any special coloration (**Pigeons: Figure 12**). In blue-colored pigeons (especially adult cocks), these feathers have a slight greenish sheen, a secondary sex characteristic. Look for them in the neck blend area. Also check for ornaments such as a dewlap and for signs of molting.

Step 9:

Run your palm smoothly along the back region. Check for abnormalities, under-color and signs of molting. Use your fingers to measure the width and length of the back (**Pigeons: Figure 13**).

Step 10:

Slowly tilt the bird downward so its head is facing down and its tail is up. Count the tail feathers and examine them for signs of molting, damage, lice and cleanliness (**Pigeons: Figure 14**).

Step 11:

Examine the vent area and check for signs of lice. Measure the space between the pubic bones with your fingers (**Pigeons: Figure 15**).



Pigeons: Figure 13



Pigeons: Figure 14



Pigeons: Figure 15



Pigeons: Figure 16

Step 12:

Examine the abdomen area to see if it is soft and pliable or hard (**Pigeons: Figure 16**). Check the condition of the plumage in this area and see whether the feathers are dry and smooth, or soiled and mixed with manure.

Step 13:

While the pigeon is facing downward, examine its legs (**Pigeons: Figure 17**). Pull each leg to observe if it is normal. Examine the thighs, shanks, feet, toes and claws. If the shank area is featherless, observe the color of the shank to see if it is appropriate for the breed. The shank and toes may be covered with feathers. When large feathers cover both the shank and toes, the area is said to be “muffed.” When feathers cover the shank area only but not the toes, the area is said to be “booted”. If the area is muffed, observe the feathers for cleanliness and damage. Pigeons will have four toes and a claw on each toe. The color of the claw will depend on the breed. Pigeon claws can be white or black.

Step 14:

While the pigeon is still in the downward pose, examine the keel bone. Measure its length and observe any defects such as crooked or dented bone (**Pigeons: Figure 18**).

Step 15:

After examining the keel bone, examine the entire breast area for muscle, meat quality (especially for utility breeds) and feather conditions (**Pigeons: Figure 19**).



Pigeons: Figure 17



Pigeons: Figure 18



Pigeons: Figure 19

Step 16:

Use one hand to stretch out one of the wings (**Pigeons: Figure 20**). Look at the condition of the feathers and check for signs of lice on flight feathers or for any holes or damage due to lice. Count the ten primary, or flight, feathers and look for signs of molting. Examine the secondary feathers and the axial feather. Look for any discolored plumage that is not true to the variety of pigeon.

Step 17:

Feel the crop area for signs of a pendulous crop and to determine whether there's any feed in the crop (**Pigeons: Figure 21**).

Step 18:

Return the pigeon to an upright position, resting on your hand and stand at attention.

General Appearance of the Pigeon

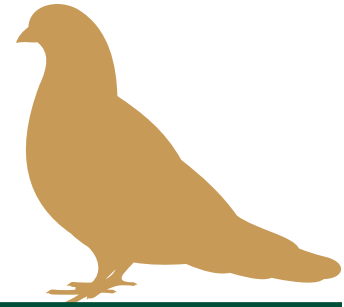
The judge will also consider your bird's general appearance, which refers to its general plumage appearance, flesh condition, defects, disqualifications and diseases. The judge will examine each bird in a general way. This may not be a detailed examination due to a lack of time. However, the judge will thoroughly examine the fitting of the bird to determine how well you have cared for it.



Pigeons: Figure 20



Pigeons: Figure 21



Pigeon Fitting and Showmanship Scorecard

APPEARANCE & ATTITUDE OF SHOWPERSON (10 PTS) _____

- ▶ Keeps attention focused on bird and judge
- ▶ Follows judge's instructions
- ▶ Handles bird considerately
- ▶ Is considerate of other exhibitors
- ▶ Wears conventional clothing; has clean and neat appearance

APPEARANCE OF BIRD (10 PTS) _____

- ▶ Is manageable; has evidence of training
- ▶ Is clean; shows evidence of fitting
- ▶ Has good body condition; appears healthy

SHOWMANSHIP (40 PTS) _____

- ▶ Holding bird prior to entry; bringing bird to the judge
- ▶ Caging and removing bird from cage
- ▶ Posing and presenting bird to judge
- ▶ Transferring bird to judge or another person
- ▶ Displaying, examining, finding or naming body parts

KNOWLEDGE OF BIRD (40 PTS) _____

- ▶ Age, sex, breed, variety and class of your bird
- ▶ Judge's Discretion – Remainder of questions may include any or all of the following:
 - The preparation of your bird for this show
 - Purpose of breed (exhibition/eggs/meat/dual purpose)
 - Defects and disqualifications for your breed and variety
 - Identification of strong and weak points of your bird
 - Other varieties in your breed; other breeds in your class
 - Your feed program
 - Your poultry health program; common diseases and parasites
 - Avian anatomy, including internal systems
 - Questions about other competitor's birds

TOTAL POINTS (100 PTS) _____

CELEBRATE YOUR SUCCESS!

Once you have participated in poultry fitting and showmanship, you can be proud of your accomplishments! In fact, you'll probably be excited enough to continue participating in this enjoyable area of poultry.

After your first contest in poultry fitting and showmanship, think about your experiences and how you felt about them. Take a few minutes to fill in your responses to these statements.

The most important thing I learned from participating in poultry fitting and showmanship was:

One thing I might do differently the next time I do a poultry fitting and showmanship project is:

One thing I learned about in my project that I would like to explore further is:

Here's how I plan to do this:

One way I could teach others about what I learned in my poultry project would be to:

Good luck with your future poultry project activities!



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4-H Poultry Showmanship Questions

CIS 1206

by Lance T. Ellis and David D. Frame

Congratulations! You have decided to compete in either a county- or state-level 4-H poultry showmanship competition. In a poultry showmanship competition you will be asked questions by the poultry judge as he or she evaluates your knowledge of poultry and your preparation for the competition.

This publication lists general poultry knowledge questions and their answers. The judge will ask you questions from this list. Answering the questions correctly contributes to your points during the competition.

The judge will ask you questions of varying levels of difficulty based on your age division. Level 1 questions are the easiest, and level 3 questions are the hardest. Junior showmen should know the answers to level 1 questions. Intermediate showmen should know the answers to level 1 and level 2 questions. Senior showmen should be prepared to answer all the questions on the list.

LEVEL 1 QUESTIONS FOR JUNIOR, INTERMEDIATE, AND SENIOR SHOWMEN

For a female to lay eggs, does she need the presence of a male?

No. She needs a male only to produce fertilized eggs.

What are the following: pullet, hen, cockerel, rooster, capon?

Pullet is a young female less than 1 year old (in other words, hatched this year). Hen is a female more than 1 year old (hatched last year). Cockerel is a male chicken less than 1 year old. Rooster is a male chicken more than 1 year old. Capon is a castrated male chicken.

What are the major external parasites of poultry?

Lice and mites

How many eggs can a hen potentially lay in 1 year?

365, one a day

What are the most common feed ingredients in poultry diets in the United States?

Corn and soybean meal

What breed of chicken is used for most commercial egg production?

White Leghorn

Why do we measure flexibility of the pubic bones?

To see if they will open enough for an egg to pass

Why should birds be removed from and placed into cages head first?

To prevent possible wing and feather damage; to maintain control of them

Which of the nutrients, besides oxygen, should poultry have free access to at all times?

Water

What color eggs do Rhode Island Red, Barred Rock, and Buff Orpington chickens lay?

Brown

What breeds of chicken lay blue-green eggs?

Araucana and Ameraucana

At what temperature should most chicken eggs be incubated?

99°F

What are basic signs of good health in chickens?

Alert, active, clear eyes; good manure consistency; no external parasites

If the sternum of a chicken it is found to be crooked, what nutritional deficiency disease could be the cause?

Rickets—a lack of calcium, phosphorus, or vitamin D in the diet

How can you tell an adult male turkey from a female?

Adult males have beards and longer snoods and are generally larger than females

Where is a chicken's crop located and what is its function?

The crop is an enlargement of the esophagus. It is located on the neck just above the junction with the body cavity. It holds the food the bird eats and slowly releases it to the rest of the digestive tract.

How many nest boxes should be provided for a flock of laying hens?

Usually 1 for each 5 hens

How can one tell if baby chicks under a brooder light have the proper temperature?

They are spread evenly under the brooder light, not all bunched up under the heat source or all far away from it. If the chicks are all to one side or another, they are feeling a draft of cold air.

In general, what air temperature should be provided for growing chicks?

About 95°F for the first week, dropping by 5° per week until reaching ambient temperature

It has been said that eggs are an almost perfect food; however, they are missing one vitamin. What is it?

Vitamin C

To keep a flock of laying hens producing eggs year-round, what key environmental factor needs to be controlled and altered to meet the needs of the bird?

Light. Maintain 16 hours of light per day year-round.

What does depth of body indicate?

Size of the abdomen and ability to hold a forming egg

Why is it important that the flock's housing be pest free, clean, and without an accumulation of manure?

Flocks in unsanitary conditions are prone to diseases and stress. Also, eggs can become contaminated.

Name two predators from which you must protect your backyard poultry flock.

Foxes, skunks, dogs, raccoons, coyotes, hawks, and owls

What does APA stand for? ABA?

American Poultry Association and American Bantam Association

How can you usually tell what color egg a chicken lays?

The color of the earlobe is directly related to the color of the egg shell. For example, a hen with white earlobes will lay eggs with white shells.

■ Questions the judge may ask specifically about your bird

What is the breed and variety of your bird?

Is your bird a male or a female?

Cock, hen, cockerel, or pullet

Identify the parts of the bird.

On the head—comb, wattles, earlobes, and/or muffs. On the body—tail, breast bone or keel bone, vent, back (saddle and length). On the leg—foot, spur, shank, hock joint, and thigh.

What do you feed your bird?

Know the ingredients of the feed and what the protein percentage is.

What kind of comb does your chicken have?

What color legs should your bird have?

**LEVEL 2 QUESTIONS
FOR INTERMEDIATE AND SENIOR SHOWMEN**

What is the function of the vent? Is it common to all poultry?

It is the urogenital opening of the bird, the external portion of the cloaca. All poultry have one. It is the common opening through which the egg, uric acid, and feces all exit.

Identify four dual-purpose breeds that are commonly raised in the Intermountain West for backyard egg production.

Plymouth Rock, Rhode Island Red, Orpington, Marans, Australorp, Wyandotte, Red Sex Link, and Black Sex Link

What is the importance of calcium in the diets of laying hens?

Calcium is needed for producing the egg shell and for developing and maintaining a strong skeletal system.

What precautions must be taken when you introduce new birds into your home flock?

Before you introduce new birds to your home flock, check them for disease and parasites. Next quarantine them for 3 weeks, and continue to check them for any symptoms. Always take care of the quarantined birds last. If you have to go back to your home flock after caring for the new birds, first change your outerwear, change your footwear, and wash your hands thoroughly with soap.

What are the differences between the plumage shapes of most adult male and female chickens?

Males have long, sharp hackle feathers; saddle feathers; and sickle feathers on the tail. Females have short, blunt hackle feathers; no saddle feathers; and no sickle feathers on the tail.

Other than feather shape, what anatomical features are unique to the male chicken?

Males have a larger comb, larger wattles, larger earlobes, different coloring, and spurs on their legs.

How do you perform a parasite check on chickens or other poultry?

Check around the vent, under the wings, and on the skin under the feathers by the preen gland. Check feather shafts for louse eggs and nits. Look for louse eggs clinging to the feathers under the wattles and the neck area.

What are some nutrients that chickens and other poultry require each day?

Protein, carbohydrates, fat, minerals, vitamins, water, and oxygen

Why is feeding straight wheat to a laying flock of chickens a mistake?

Feeding wheat or any other grain as a sole ration does not provide a balanced diet for good health and egg production.

What does width of body indicate?

The size of the body across the pelvic bones indicates the amount of room available for eggs and vital organs.

Why does the judge ask to see the feet and legs of birds?

To check for deformities, disease, and parasites

What does “molt” mean relative to chickens?

When they molt, chickens lose their feathers, stop reproducing, and go through a renewal for another reproduction cycle.

Do chickens ever have teeth?

Yes. They have an egg tooth at hatch to help break through the shell. This tooth is different from mammalian teeth as it is not composed of enamel.

What is a “dual-purpose” chicken?

A dual-purpose chicken can be used for both meat and egg production. Examples are Rhode Island Reds and Plymouth Rocks.

What needs to be supplied in an artificial incubator to hatch eggs?

Heat, humidity, and turning

How many feather tracts do chickens have?

10: head, neck, shoulder, wings, breast, back, abdomen, rump, thigh, and legs

What and where are the covert feathers?

Small feathers on the wing that fill in the spaces between larger feathers

What is the function of the comb and wattles on chickens?

Sex differentiation, identification, and thermoregulation

What are some of the methods for verifying that a hen is currently laying eggs?

Width between pelvic bones equals the width of three human fingers; the vent is large, soft, and moist rather than small and dry; the comb is larger and redder

What gas that can be harmful to chickens can be produced in manure?

Ammonia

If you see a lot of manure staining on the feathers just below the vent of your bird, what health-related problem should you suspect?

Diarrhea

What is the main difference between starter feed, grower feed, and layer feed for feeding chicks, pullets, and laying hens, respectively?

Crude protein concentrations: starter 18 to 19%, grower 14 to 15%, and layer 16 to 17%

What is the difference between a broiler, a roaster, and a capon?

Broilers are young meat birds, usually processed at 6 to 8 weeks of age. Roasters are usually 10 to 14 weeks of age. Capons are castrated meat birds grown to about 18 to 20 weeks of age.

What is bumble foot?

An infection in the foot pad of poultry, usually caused by Staphylococcus aureus in the manure

What is the ratio of males to females that will provide the best fertility for a laying flock, without having more males than necessary?

About 1 male for every 10 females

What is the gizzard and what is its function?

The gizzard, also known as the ventriculus, is part of the chicken's digestive system. It is just behind the proventriculus, the true stomach, and it is where food is ground up to aid in digestion and absorption.

What is cannibalism and how can it be prevented or reduced in your flock?

Cannibalism is the pecking of one bird by another. It can cause injury and/or death. It can be prevented by beak trimming or decreasing the density of your flock

What are two other names for the breast bone of chickens?

Sternum and keel

In what part of the hen's reproductive tract is the shell produced?

Uterus or shell gland

Name a “bantam-only” breed.

Silver Sebright, Golden Sebright, Japanese Bantam, others

■ Questions the judge may ask specifically about your bird

Name other varieties of your breed of chicken.

**LEVEL 3 QUESTIONS
FOR SENIOR SHOWMEN ONLY**

Describe the damage that results from having lice on chickens.

Damage to feathers, stress because of blood loss and irritation that can then lead to vulnerability to disease and death from cold, excessive pecking, infection, and a decrease in laying production

What is the function of the uropygial (preen) gland?

The preen gland produces an oily substance the bird wipes onto its feathers with its beak, called “preening.” In ducks and waterfowl preening helps to waterproof their feathers.

What is meant by “bleaching” in chickens?

It refers to the loss of skin color in laying hens, particularly in Leghorns and other yellow-skinned breeds. The yellow pigment in the skin, xanthophyll, fades to white as the pigment is used to color the yolk. Bleaching occurs in this order: vent, eye ring and earlobes, beak, bottom of feet, front of shanks, back of shanks, tops of toes, hock joints. When birds stop laying eggs, they will replace the skin pigment in reverse order.

Where does the yellow color of the skin, beak, and shanks of chickens come from?

Xanthophyll in the corn and grass they eat

How long (in days) is the incubation period for chickens, turkeys, ducks, and geese?

21, 28, 28, and 32, respectively

What is the purpose of turning eggs in an incubator?

To keep the embryo from sticking to the membranes and becoming malformed

Why should incubators be fumigated or disinfected prior to use?

To remove any bacteria, virus, or mold organisms that might infect the eggs

How many eyelids does a chicken have? Why?

Three: upper, lower, and the nictitating membrane, which moves from the front to the rear of the eye and is clear. Eyelids are for keeping foreign substances from entering the eye.

How many primary and secondary flight feathers do most chickens have?

10 primary and 14 to 18 secondary

Where are the axial feathers found, and how many do chickens have?

One on each wing, between the primary and secondary flight feathers

How is *Salmonella Pullorum* spread or transmitted?

Through the egg, either by organisms from the hen’s ovary or from manure in the nest box that contaminates the shell

Small flock owners should be particularly aware of which two poultry diseases that can cause high mortality and are of great concern to commercial poultry growers?

Avian influenza and exotic Newcastle disease

Why is diarrhea a concern and how can it be treated?

Diarrhea can lead to dehydration and possibly to death. One needs to rehydrate the bird by providing electrolytes and water and then determine why the bird had diarrhea in the

first place and treat that cause. A high load of worms, coccidiosis, or bacterial infection of the gut can often lead to diarrhea. A flock with diarrhea can also cause bad litter conditions—excess moisture and ammonia production—leading to foot and leg problems.

Some females in breeding flocks sometimes lose feathers on their lower back and on the back of the head. What is the cause of this?

When breeding, the male stands on the back of the female and holds onto the feathers on the back of the head with his beak, causing feather loss.

Many starter feeds for chickens are labeled “medicated.” What is the medication and why is it in the feed?

The medication is amprolium. It helps the bird build immunity to coccidiosis, a protozoal disease of the digestive tract of birds. There are nine different types of coccidiosis, so medicated feed is a good preventative measure.

How much floor space should be provided for standard and bantam adult laying hens reared on the floor?

About 1.5 to 2 square feet for standards and 0.75 to 1.5 square feet for bantams

What is “biosecurity” and why is it important for your flock of birds?

Biosecurity means preventing infectious or disease-causing organisms and other pests like insects, rodents, etc., from coming in contact with your birds. It means keeping human traffic to a minimum, not allowing your birds to have contact with any sick birds, and not visiting infected flocks.

Biosecurity also means keeping disease in. Be a good neighbor and don’t visit other people’s flocks without changing your clothes and footwear and thoroughly washing your hands. In other words, treat your own flock as if it were infected with something even if it isn’t. Keep a foot dip pan filled with disinfectant near the door to your coop and dip your shoes or boots prior to entering your facility. It will prevent disease transmission to your birds and is very important.

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Bathing and Grooming Poultry

When showing poultry, whether for exhibition or in showmanship, the condition and cleanliness of the birds are reflections of their owners. Designate an area for your show birds, and do not allow them to run with the rest of the flock. If possible, keep them in individual coops or cages during the show season to maintain condition and cleanliness.

Bathing

Birds should be bathed at least five days before a show. This allows the bird time to dry completely, oil to be restored to the feathers, and for them to groom their own feathers. Before you begin, gather the necessary items needed to bathe your birds.

List of Bathing Supplies

- Toothbrush – used to scrub the shanks, feet, toes, and toenails
- Apple Cider Vinegar – used to help rinse the shampoo out of the feathers. Use about ½ cup for a tub of water
- Shampoo – used to clean the feathers; do not use a harsh shampoo as it will make the feathers brittle. You can use a flea and tick shampoo recommended for cats or dogs, which not only cleans the birds but kills lice or mites gone unnoticed.
- Blow Dryer – used to dry loose-feathered birds if needed
- Towels – used to dry birds
- Nail clippers and file – Used to clip toenails and upper beak, and file the beak
- Sponge – used to wash the birds, particularly the head
- Cotton balls and styptic powder – to stop bleeding in case the nails and beak are cut too short
- Three tubs or 5-gallon buckets of warm water– to bathe and rinse birds; Note: You can use a utility tub with warm running water located in your basement, work room, etc., to wash and rinse your chickens instead of the three tubs. (Hand held shower heads are nice)
- Heat lamp or heat source if it is cold outside so bird's do not get chilled

Step 1: Hold the bird in one hand with the legs between your fingers and your other hand on the bird's back. Slowly lower it into one tub of water. Birds will typically enjoy the warm water. Some will go to sleep, so watch they do not drop their head into the water and drown.

Step 2: Put a small amount of shampoo on the bird and wash every part of the bird. Wash in the direction the feathers grow, taking care not to break any. You may need to wash the vent area and the ends of the wings twice to ensure cleanliness. Be careful when washing feather-legged breeds not to tear any feathers on the legs or feet.



Step 3: Put the vinegar into the second tub and thoroughly rinse your bird.

Step 4: Put your bird in the third tub of warm water to make sure there is no shampoo left in the feathers. If you don't get all of the soap out of the feathers, they will clump together, look gummy and dull.

Step 5: Remove the bird from the third tub and wrap it in a towel. Make sure its head is sticking out of one end of the towel and its feet are sticking out of the other end.

Step 6: Use a soft toothbrush to clean the shanks, feet, toes, and toenails. Again, be very careful not to damage the feathers on the legs and feet of feather-legged breeds.

Step 7: With the bird still wrapped in the towel, clip the ends of the toenails and spur. Be careful not to cut into the quick (vein) or it will bleed. If this should happen, apply styptic powder using a cotton ball. Apply pressure until the bleeding stops. (Use flour, liquid bandage)

Step 8: Wash the face with a sponge or cotton ball.

Step 9: Clip the upper part of the beak and file the sides to match the bottom part of the beak. Never trim the bottom part of the beak.

Step 10: Remove your bird from the towel.

Step 11: Put hard-feathered birds in a clean carrier, coop, or small pen with clean shavings and allow to air dry. They will groom their own feathers and be dry in about 24 hours. Make sure the wet birds are not in drafts, or where it is too cool, cold, or too hot.

Step 12: It is best to let loose-feathered birds dry on their own. However, if you decide to blow dry these birds, do so on low heat. Be careful not to hold the dryer too close as the heat could hurt the bird's skin and feathers. Too much heat from hair dryers can damage feathers. Drying birds with a hair dryer can be a long process. Most birds look better if allowed to dry and preen on their own.

Once your birds are dry, keep them clean by putting them in clean individual coops or cages about the size of the show coop. Bed with dust-free shavings and keep the cages clean.

Use soapy toothbrush to gently scrub of any dirt on combs and wattles and around their face. Use the nail file to pick dirt out from under their toenails and from under the scales on their legs.

If the weather is too cool or cold, set up a place in your house for the birds to dry. If that is not an option

Grooming

Preparing your bird for show doesn't stop after bathing and some pre-show grooming! Once you arrive at a show, you should do some final grooming that will make your bird look its best for the judge.

Come prepared to the show with a grooming box. A plastic tackle box is great to carry your last-minute grooming items. Items to carry in your show box include:

NPIP Number and/or Paperwork should be in an envelope in your grooming box

Baby oil gel (coconut oil) – used to shine shanks, feet, combs, and wattles

Toothbrush – in case you find some dirt or manure on the feet

Styptic powder – in case you need to stop bleeding from anything

Cotton balls – used to clean feathers or apply baby oil

Nail clippers – in case you forgot to trim a toenail or the beak

Antibiotic ointment – to put on combs or wattles that have been scratched

Wet wipes or washcloth – used to clean legs and feet at the last minute

Silk cloth – used to shine feathers of tight-feathered birds

Band-Aids – in case your bird pecks or scratches you causing bleeding

(Use baby oil to enhance combs)

Electrical zip ties in case a partition is not solid

Clear plastic if you need to put around coop to keep birds from fighting

The show, including showmanship, will have a start time. Get there in plenty of time to coop in your birds. Touch them up at this time. Keep checking them to make sure they are still clean prior to the aisle being closed for judging, or when your showmanship class is called. Do any final touch up as close to judging as possible. It is important you stay clean for showmanship, so when touching up your birds wear an old shirt or apron. A carpenter's bib apron with front pockets keeps your clothes clean and gives you places to put things.

Follow these steps:

Step 1: Remove your bird from the show coop and check it over for any dirt or manure that may have gotten on it. Use a damp cloth or baby wipes to clean the feet, toes, and vent area, or any other dirty spots.

Step 2: Using either a cotton ball, cloth, or your fingers, put a tiny amount of baby oil gel on the beak, comb, wattles, earlobes, shanks, feet, and toes. For feather-legged breeds, put just a little on the bare parts of their legs and feet. Also, put a dab on the spurs.

Step 3: Smooth out any rough feathers by running your fingers down the shaft and putting the web back together. You may need to do this feather by feather, paying particular attention to the wings and tail feathers.

Step 4: Use the silk cloth to rub the bird from head to tail several times, always going in the direction the feathers lay. Rub the underside, also.

Step 5: Remove any soiled bedding in the show coop. Put your bird back in and gently give it one last wipe with the silk cloth.

Remove the water from birds with beards and muffs until the judge is finished. You do not want the feathers wet. You can also use a (need to find out what it is called) waterer where the bird can only get its beak wet and the beard and muff stays dry. Pop bottle waterer

Also remove the food after their evening feeding so your bird's crop is not full. A full crop can change its appearance.

Always monitor your birds. If the judge is taking a long time to judge your class, and it is a hot day, do not let your birds go too long without water.

Author: Lucinda B. Miller

Sources:

Bathing and Grooming Poultry for Show: An Easy-to-Follow Manual for the Beginner, Megan and Makayla Kinard, APA-APA Youth Program

Tim Bowles, Lucasville, Ohio

NETWORKING WITH SPONSORS

9



Networking with Sponsors

Jeremy Case, UI Extension 4-H Program Assistant

Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will learn who sponsors are, what they do, and how to identify potential sponsors. Youth will understand the importance of elevator pitches while writing and delivering elevator speeches.

Supplies

- Pens or pencils, enough for group
- Note cards, enough for group
- *Quick Tips: Elevator Pitch*, enough for group

Preparation

- Read *Quick Tips: Elevator Pitch* before the activity to become familiar with the content of the lesson.

Lesson Directions and Outline

The 4-H program is only made possible by the generous donations of our sponsors. Sponsors help donate time, resources, or funding to ensure that our program continues to succeed in making the best better.

Sponsors can take a variety of forms. Some are local business owners while others are club 4-H leaders. Some sponsors support 4-H by donating money for awards and ribbons at the shows while others donate their time and resources to teaching youth how to show animals and guide them through their projects. Even market sale buyers are considered sponsors.

Without sponsors, 4-H would not have the positive impact it does on youth. We want to ensure that 4-H

continues to expand its outreach. This lesson will allow students to understand how to network with sponsors.

Conducting the Activity (DO)

Part A (~30 minutes)

1. Introduce an elevator speech. Tell youth that an elevator speech is a short speech, one that could be given in an elevator, that quickly tells someone about yourself, an organization, or activity and why it is important.
2. Youth will write and present an elevator speech that discusses the 4-H program and their project. Refer to *Quick Tips: Elevator Pitch* when introducing the speech and give each youth a copy for reference.
3. Give youth time to draft their speeches on the note cards.
4. Once they have finished, ask them to present in front of everyone. Give them quality constructive criticism on how to improve their speech.
5. Have youth revise their speeches and break into partners to present them again. This time, youth should practice their speech delivery as if they were talking to a sponsor. Proper handshakes, eye contact, and tone should be emphasized while practicing.

Part B (~10 minutes)

1. Lead a discussion as to what sponsors and buyers

are and the differences and similarities between the two.

2. Have the youth brainstorm locations in their area where they could find potential sponsors or market sale buyers, such as store managers, grandparents, small business owners, etc.

What Did We Learn? (REFLECT)

- What did you learn?
- What is the purpose of the elevator speech?
- What is a sponsor and why are they important?

Why Is That Important? (APPLY)

- Who could be a potential buyer or sponsor? Where could you find them?
- When should you start networking with potential buyers?
- Why is it important to have an elevator pitch prepared when working with potential buyers and sponsors?

Resources

Carnegie Mellon University Career and Professional Development Center. n.d. "Quick Tips: Elevator Pitch." <https://www.cmu.edu/career/documents/quick-tips/elevator-pitch.pdf>.

quick tips Elevator Pitch

Step 1. Outline the Pitch

Developing your Elevator Pitch (or Professional Self-Introduction, or just Introduction) is useful in introducing yourself at career fairs, networking opportunities, and even in the “tell me about yourself” question of an interview. It was originally named Elevator Pitch from the concept of selling yourself or your business to a complete stranger from the time it would take to enter an elevator until you reach your desired floor.

Who am I ...

Begin by telling the recruiter your name, year in school, university, and major. List anything unique about your course of study

What can I offer ...

Next, discuss your accomplishments/skills most relevant to the company or job. Include 'evidence' through projects, classes, internships, research, on-campus jobs, service, leadership and activities

Why am I here ...

When discussing why you are here, you're telling the recruiter what it is you are seeking. "Here" in this context can mean job fair, networking event or online application. Mention why you are interested in this company or how your skills/experiences align with their needs.

What I hope happens in the future ...

Lastly, indicate areas for growth and how this aligns with your professional goals. Also mention what you hope happens as a result of this meeting (Get an interview? Stay in touch on LinkedIn?). You can end with a question that invites the listener to join in the conversation.

Step 2. Tips for your Pitch

The length of your pitch

A good suggestion is that your initial introduction lasts about 30-seconds. Hopefully, you and the employer will then continue the conversation. At a career fair the conversation may extend beyond the introduction by 3-5 minutes. However, in a more casual networking setting, your initial introduction could turn into a 15-minute conversation. It depends on the situation. For the "tell me about yourself" interview question, your introduction will need to be 1-2 minutes long.

quick tips Elevator Pitch (cont.)

Step 2. Tips for Your Pitch (cont.)

More tips for your pitch

Show appreciation of and/or familiarity with the company (doing prior research on their website or LinkedIn profile will help)

Present yourself as adding immediate value to a company in terms of your experience and skill set

Make sure that your message is concise, yet informative

Be prepared for them to ask for your resume after you've given your pitch and then to ask you questions about what you have listed on your resume

Practice your pitch until it sounds natural, not rehearsed

Sample pitch #1 for a career fair

"Hi, I'm Amelia Malkin. I am a Junior Business Administration major in the Tepper School of Business completing a track in Finance. Last summer I interned with PNC Financial Services as a Sales and Trading Summer Analyst in the Derivatives Product Group. I'm now interested in pursuing a summer internship position with Citi in Sales and Trading where I can utilize my communication skills and solid quantitative abilities. My experience as a student athlete at Carnegie Mellon has helped me to develop a strong teamwork ethic, time management skills and the ability to stay calm under pressure and these abilities will help me to be successful in a financial services career. Can you describe some common projects an intern would get to work on in the Sales and Trading division?"

Sample pitch #2 for a career fair

Hi, my name is Jon Ling and I will be starting my junior year in the Social and Decision Science major in the School of Humanities and Social Sciences with an interest in consumer research and product development. I am also the President of the undergraduate Entrepreneurship Association. I'm very interested in gaining experience in product development with a firm such as P&G, which continues to set the industry standard for analyzing consumer behavior and developing cutting-edge products. I'd like to learn more about internship opportunities within your organization."

Sample pitch #3 for a career fair

Hello, I'm Julia Stuart. I am a junior in Mechanical Engineering with an interest in design and testing. I have completed several Mechanical Engineering projects such as the Astronaut's Coat Rack and last summer I completed an REU at the University of Iowa on building robots. I am also the President of the Robotics Club on campus, where I lead a group of more than 30 students in various projects. I'm very interested in bringing my design, analytical and teamwork skills to Ford this summer. Could you please tell me about internship opportunities with your company?"

quick tips Elevator Pitch (cont.)

Step 2. Tips for Your Pitch (cont.)

Example of a networking conversation

Student: "Hi, I'm Amelia Malkin. I am a Junior Business Administration major in the Tepper School of Business completing a track in Finance.

Employer: Hi Amelia, I'm Jim Lancaster from Wells Fargo. What are you interested in?

Student: I'm interested in pursuing a summer internship in Sales and Trading where I can utilize my communication skills and solid quantitative abilities.

Employer: Are you involved on campus at all?

Student: I am on the CMU Volleyball team. I think my experience as a student athlete at has helped me to develop a strong teamwork ethic, time management skills and the ability to stay calm under pressure and these abilities will help me to be successful in a financial services career.

Employer: Do you have any other experiences that would help you at Wells Fargo?

Student: Last summer I interned with PNC Financial Services as a Sales and Trading Summer Analyst in the Derivatives Product Group. Can you describe some common projects an intern would get to work on in the Sales and Trading division?

Employer: [technical answer] It sounds like we should stay in touch concerning future internship positions at Wells Fargo. Here is my email address. Why don't you follow-up by sending me your resume.



Additional help

After you develop your elevator pitch, meet with your career consultant to review and practice it. Additionally, check our online videos about elevator pitches at <http://www.cmu.edu/career/resources/index.html#Elevator-Pitch>.

THANKING SPONSORS

10



Thanking Sponsors and Buyers

Jeremy Case, UI Extension 4-H Program Assistant

Suzann H. Dolecheck, UI Extension Educator

Scott Nash, UI Regional Extension Educator

Learning Objective

Youth will understand the importance of properly thanking the buyers and the sponsors of the 4-H program. Youth will practice writing thank-you letters and addressing envelopes.

Supplies

- Pens/pencils - enough for group
- Standard envelopes, enough for group
- Notebook paper, enough for group
- *Tips for Writing Thank-You Notes (Handout 1)*, enough for group

Pre-Lesson Preparation

- Collect random addresses to which the students can practice addressing letters. Put addresses on slips of paper with address elements separated.

Lesson Directions and Outline

When you complete your project and sell at the county fair's market auction, a buyer purchases your poultry. They could be a small business owner, a teacher, or even a grandparent. Every county does the sale differently, so ask your county Extension office what to expect. You also might receive a prize or ribbon at the show, which was funded by a community sponsor.

Regardless of who buys your animal or what you win, it is very important that you thank your buyers and sponsors properly. This is done through a formal thank-you note, usually one that is handwritten to show effort and sincerity.

We want to ensure that buyers and sponsors continue to support the county 4-H program in the future. This lesson will help students to practice writing thank-you notes and addressing envelopes.

Conducting the Activity (DO)

Part A (~25 minutes)

1. Give each youth a pen/pencil and a piece of notebook paper. Tell the youth to think about a time when someone did something nice for them, whether it be a gift from a relative or a kind act from a friend.
2. After brainstorming, help youth write a proper thank-you letter to their relative, friend, etc. They can refer to the handout.
3. Once students complete their thank-you letters, have each share what they wrote.

Part B (~10 minutes)

1. Hand each youth a blank envelope and a random address slip.
2. Ask youth to address the envelopes to the address that was given. They can refer to handout 1 regarding the format to address envelopes.
3. Have the youth fold their letters properly into thirds and place them in the newly addressed envelopes.

What Did We Learn? (REFLECT)

- What did you learn during this activity?
- In which situations would you write a thank-you letter?

Why Is That Important? (APPLY)

- Why is it important to write thank-you letters?
- What could happen if we don't thank our sponsors and buyers properly?

Resources

Luther College. 2022. "Addressing Envelopes/Packages." Mail Center. www.luther.edu/mail-center/envelope-package-addressing/.

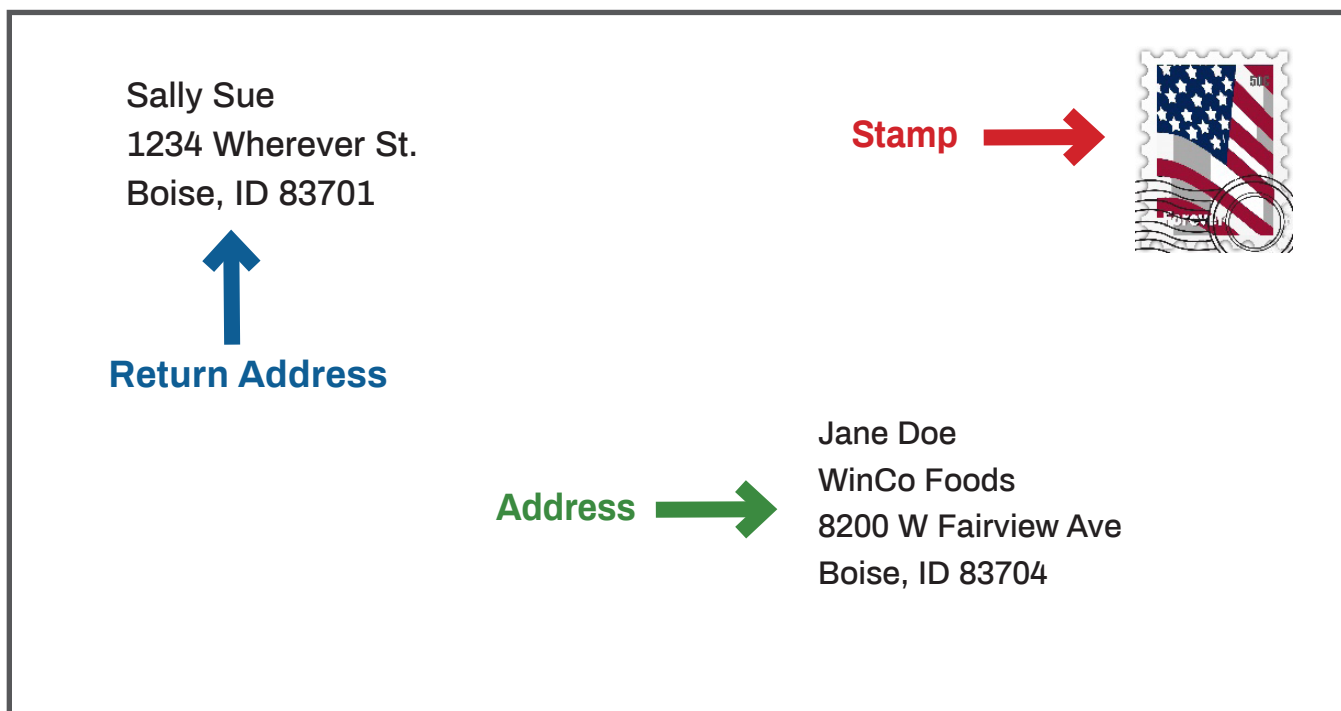
Webjunction.org. 2017. "74+ Thank-You Letter Examples in DOC/PDF." *Examples*. www.examples.com/business/thank-you-letter.html.

Tips for Writing Thank-You Notes

When writing thank-you letters, be sure to keep these things in mind:

- Don't just write "Thank you." Be specific and tell the recipient what you are thanking them for.
- Make it personal and be sincere. Explain a little bit about what you intend to do with what they gave you or did for you.
- Tell them briefly what their gift, act, or time meant to you.
- Always date your letter at the top and sign your name at the end.
- Keep the letter brief and no more than a few paragraphs.
- Write your letter by hand with legible handwriting.

When addressing envelopes, refer to the diagram below:



Mailing addresses are formatted as follows:

- Name
- Address
- City, State Zip Code
- Country

Basic Gift Fundraising Thank You Letter

April 1, 2005

Mr. Danny Donor
123 Sesame St.
Anytown, Anystate 10001

Dear Mr. Donor

Thank you for your gift of \$50 to the Anytown Public Library Foundation. We are grateful for your donation and will acknowledge it in the quarterly Foundation newsletter.

Your gift will support literacy and learning in this community, helping people change their lives through reading. Your donation will support reading programs, technology and needed furnishings that are not covered by the tax dollar. You are supporting library excellence for the residents of Anytown.

Thank you for making a difference with your gift to the Anytown Public Library Foundation. I appreciate your generosity.

Sincerely,

Frannie Fundraiser
Foundation Director

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