



Introduction
to the
**4-H Poultry
Project**

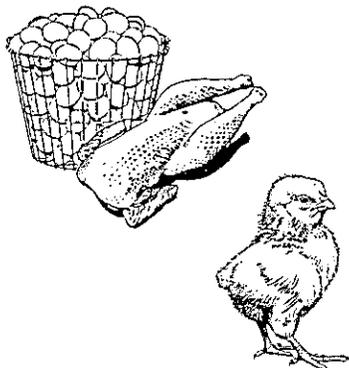


Introduction

The 4-H poultry project is for boys and girls who want to learn to raise and grow chickens. If you complete this project, you will learn (1) to identify different varieties of poultry, (2) to feed and manage poultry, (3) to exhibit poultry and (4) to record your activities.

The 4-H poultry project includes three kinds of project work. You may do one, two or all three.

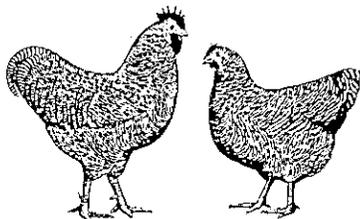
Poultry Projects



1. **Broiler Production Project.** Club member raises 25 or more chickens (broilers) to produce meat. This short-term project lasts only seven to nine weeks. Broilers raised for this project are bought as 1-day-old chicks.
2. **Egg Production Project.** Club member raises a flock of chickens (20 to 25 hens) for their eggs. This long-term project generally lasts six months or longer. Hens used for this project may be bought as pullets (young females) or raised from chicks. The eggs produced can be for home use or sold to a local market.
3. **Exhibition Birds Project.** Club member raises a small flock of chickens (15 or more birds) to exhibit at parish and state poultry shows. All birds exhibited must have been raised from 1-day-old chicks. Exhibition birds must be purebred and may be standard bred or bantams. Standard bred are normal-size chickens. Bantams are miniatures. Club member may exhibit both standard and bantams.

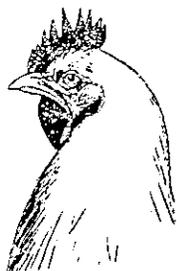
Breeds of Poultry

A system of classes, breeds and varieties has been established to identify and classify chickens.



A class is a group of breeds that originated in the same country or region of the world. The name indicates the region where the breed began, such as English, Mediterranean or American.

Most chickens grown by today's commercial poultry industry are from the American, English or Mediterranean classes. Breeds in the American class have yellow skin and unfeathered shanks. They adapt easily to different conditions and are used to produce both meat and eggs. Popular breeds in the American class include the Plymouth Rock, Dominique, Rhode Island Red, New Hampshire, Wyandotte, Jersey Giant and others.



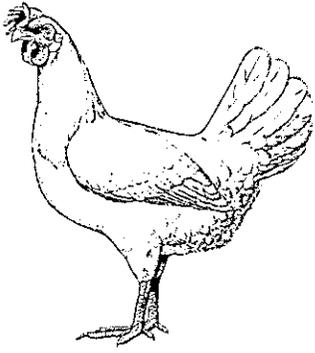
Breeds in the English class excel in producing meat. Popular English breeds include the Cornish, Australorp, Orpington and Dorking.

The Mediterranean class includes breeds that produce eggs, not meat. They are small and lay white eggs. Popular breeds include the Leghorn, Minorca, Blue Andalusian and Ancona.



Breed refers to a group of fowl, each having the same physical features such as body shape, skin color, number of toes and feathered or unfeathered shanks. For example, Plymouth Rock has a long body. It has a broad, prominent breast and a deep body. Wyandotte has a round body. Its feathering makes it look like it has a short back.

A variety is a subdivision of a breed. Color patterns, comb type and a beard or muff are used to divide a breed into various varieties. Examples of the varieties of the Plymouth Rock breed are White, Barred, Buff, Columbian, Blue Partridge and Silver Penciled. In each case, the body shape is identical. Feather color is the only difference.



The main purpose of growing poultry is to produce meat and eggs. Chicks grown for meat are called broilers. Broilers are crosses of White Plymouth Rock, White Cornish and other breeds. They convert feeds into meat more efficiently than any other type of livestock. With good growing conditions, broilers can convert 1 pounds of feed into 1 pound of weight gain.

Club members beginning an egg production project should select one of the White Leghorn strains. These birds can produce eggs on a small amount of feed.

Any of the purebred breeds can be grown to exhibit. You may also want to consider raising bantams. Bantams are the miniatures of the poultry world. Most large fowl have a miniature likeness called a bantam. They have the same requirements for shape, color and physical features as do large fowl. Bantams are raised for their beauty, as pets or for companion animals. Often they can be kept in areas too small for large fowl. They are excellent birds to grow for exhibition.

Activity 1: Understanding Breeds

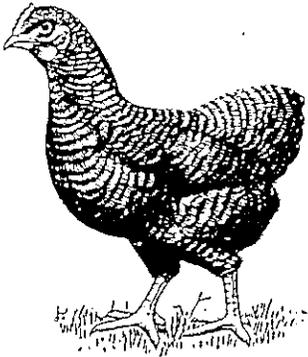
Instructions: Match the breed with purpose. Circle A, B or C for the purpose that matches the breed.

Purpose

- A. Egg Production
- B. Meat Production
- C. Both Egg & Meat Production

Breeds

- | | | | |
|---------------------|---|---|---|
| 1. Plymouth Rock | A | B | C |
| 2. Rhode Island Red | A | B | C |
| 3. Jersey Giant | A | B | C |
| 4. Leghorn | A | B | C |
| 5. Cornish | A | B | C |
| 6. Minorca | A | B | C |
| 7. Orpington | A | B | C |
| 8. Blue Ancona | A | B | C |
| 9. Astralorp | A | B | C |
| 10. Broilers | A | B | C |



Selecting a Breed

You must first determine whether you wish to produce broilers for meat or grow out pullets for egg production or exhibition. The poultry industry has developed "cross-breeds" of poultry specifically for meat production. These birds grow and feather fast and are ready for market at six weeks of age or less. All birds of this type should be used for meat. Do not retain these pullets for egg production.

Leghorn breeds are the ones kept for egg production. These birds live well, grow fast and begin laying eggs at 5 to 5 ½ months. You can choose from many excellent breeds and strains.

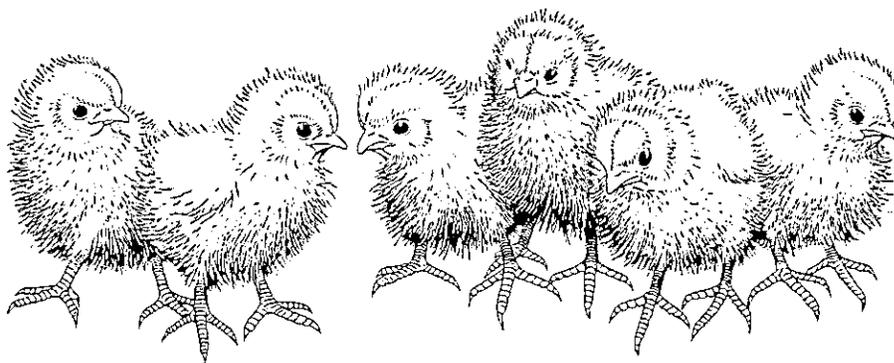
You also have many breeds and varieties to choose from if you raise birds for show. The American Poultry Association and the American Bantam Association issue books called the Standard of Perfection. These books include descriptions and illustrations of each recognized breed and variety. You can select a breed by studying the American Standard of Perfection. Your 4-H agent should have a copy.

Purchasing Chicks

Buy chicks from a reliable hatchery. The hatchery you choose should belong to the National Poultry Improvement Plan (NPIP) or should practice a blood-testing program to purchase chicks that are pullorum and typhoid clean. These diseases can be passed from the hen through the egg to the baby chick if the hatchery does not follow a continuous testing program.

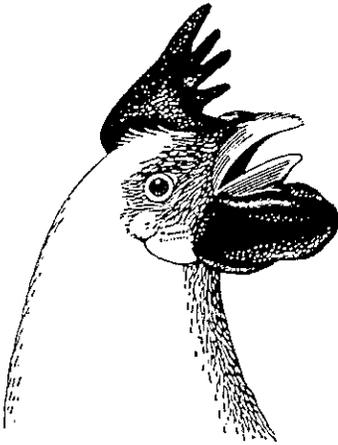
Chicks purchased for egg production or exhibition should be started in January, February, March or April. Chicks started in these months will be grown and ready for the usually higher egg prices in August, September, October and November. They also will be in peak condition for showing at the Louisiana State Fair in October.

Chicks purchased for meat production can be started at any time. They should be grown, however, to be eligible for the Parish Broiler Show, State Fair or the LSU AgCenter Livestock Show. Your 4-H agent will be able to tell you these dates each year.



Poultry Talk

Many special terms are used in poultry production and selection. You need to become familiar with them to develop your selected poultry project. These terms will also help you talk to poultry producers to select your breed of poultry.



Broiler – a chicken less than eight weeks old, which will cook tender by broiling or frying.

Flock – three or more birds kept in one place.

Hen – a female chicken over 1 year of age for exhibition purposes.

Pullet – a female chicken under 1 year of age for exhibition purposes.

Cockerel – a male chicken under 1 year of age for exhibition purposes.

Cock -- a male chicken over 1 year of age for exhibition purposes.

Exhibition – birds shown for their outward genetic expression (color patterns, body type and other characteristics).

Standard bred -- large fowl that weigh more than 3 lb at maturity.

Bantam – small fowl (or miniature) that weigh less than 2 lb at maturity.

Crossbred -- the offspring of parent stock of different genetic makeup.

Fowl -- refers to chickens mostly, but also refers to most avian species.

Nutrients – the individual components of a feed or ingredients required by an animal.

Protein – any of a large group of complete organic components essential for tissue growth and repair.

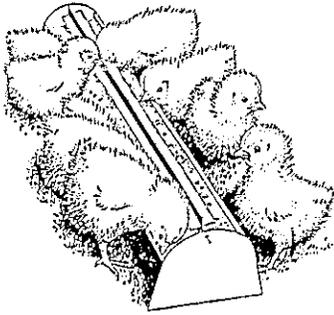
Ration -- a combination of ingredients (feed stuffs) that supply all of an animal's dietary needs.

General Management and Care of Poultry

Raising poultry successfully for meat, eggs or exhibition depends on your ability to provide the proper management and care for the birds.

Housing and Equipment

The basic requirements of a poultry house are that it provide enough space, protection from weather and predators (dogs, possums, foxes, etc.) and allow for movement of air. Space requirements depend on the type of chicken such as for egg production, exhibition or meat production.



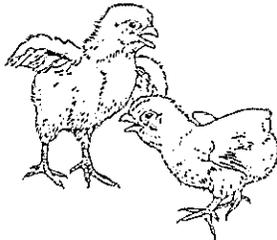
Egg-production birds require about 3 square feet of floor space per bird. Larger breeds grown for exhibition need more space. Space also should be provided for separating males and females for exhibition. Bantams need 2 to 3 square feet of floor space per bird. For both standards and bantams, individual cages are required for the adult males.

Poultry house windows should be covered with 1-inch mesh poultry netting. During cold weather, the windows can be covered with plastic film if needed. Be sure to provide adequate ventilation.

All young chicks require a heat source. Heat can best be supplied by an electric heat lamp. A 125-watt lamp is suitable for cool and warm weather and a 250-watt lamp for cold weather.

Chicks will need a trough or tube feeder. A trough 2 feet long is adequate for 12-15 chickens. One tube feeder will provide enough feeder space for 25 chickens. A 1-gallon waterer is adequate for 25 to 30 chicks. Use larger waterers for older chickens.

Brooding Management

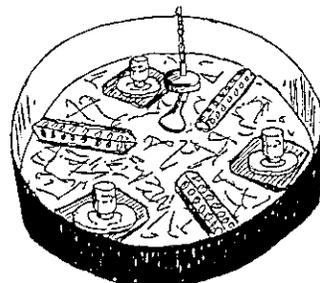
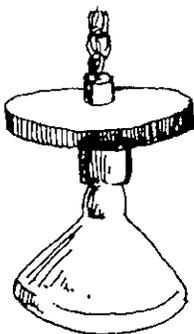


Brooding refers to the care of young chicks during the first 2 to 3 weeks of life. Good brooding practices bring out good qualities in chicks.

Use a disinfectant to sanitize the house and equipment before the chicks arrive. A solution of chlorine, iodine or quaternary ammonia can be used. When using any disinfectant, carefully follow the instructions on the label and get an adult to help you. Cleaning and disinfecting help to control diseases and parasites.

Once the brooding area has dried, place 4-6 inches of dry litter on the floor. Materials such as dry pine shavings, rice hulls or chopped straw make good litter.

The brooder lamp should be suspended about 15-18 inches above the litter and turned on the day before the chicks arrive. The lamp should be an infrared lamp, generally a 250-watt lamp bulb. Do not hang it by the electrical cord (see diagram). Secure the lamp at the proper height with a rope or chain. Heat lamps get very hot and are a fire hazard. They should not come near or touch the litter.



Place waterers and feeders inside the brooder area near the heat source. Do not crowd them under the light. The diagram will help you place equipment.

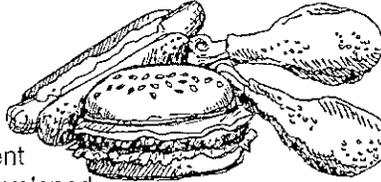
Place feed in shallow, flat pans for the first two or three days. This makes it easy for chicks to find food. After day three, replace the feed pan with a trough or hanging feeder. Hanging tube feeders are best for small flocks. Height of hanging feeders can easily be adjusted as the birds grow.

7th - 8th Grade Poultry Project Introduction

Is your idea of poultry production a few chickens in the back yard? Well, hang on to your hat! You are about to walk through a whole new world of poultry in 3-D! The ancestors of today's chickens can be traced back to the wild jungle fowl of Asia. The domestication and distribution of chickens in the world today were greatly influenced by the sport of cock-fighting. From the red jungle fowl, many colors, sizes and types of chickens have been developed. The world of poultry is not just limited to the chickens. The term poultry includes many types of birds such as turkeys, ducks, geese and quail.

The bird is unique in its ability to produce two protein-rich products. Meat and eggs are highly nutritious and relatively inexpensive foods. Eggs are used in many recipes from Crepe Suzettes to Baklava. Egg production is an important agricultural enterprise producing more than 300 billion eggs annually. Poultry meat consumption in the United States now exceeds all other meat sources.

The average American eats more than 70 pounds of poultry meat each year. This includes whole chicken, chicken nuggets, turkey franks, ground turkey, fast-food chicken sandwiches and much more. Today's poultry industry is constantly changing to meet the demands of you, the consumer. Convenient and versatile poultry products are being developed for tomorrow's market.

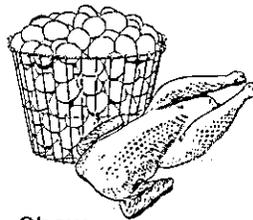


Poultry is one segment of agriculture with several special features:

Broiler Production - Meat

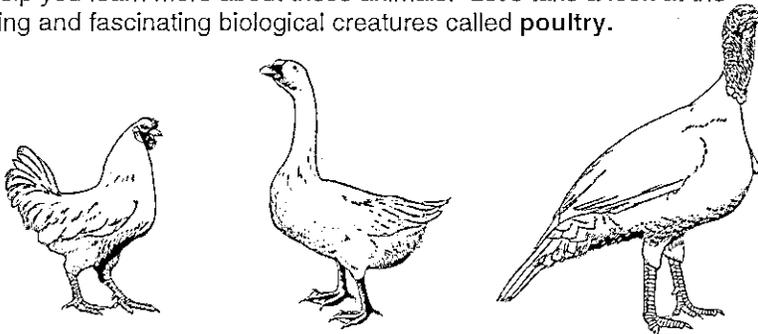
Egg Production - Eggs

Purebred Exhibition Poultry - Show



Each of these will be discussed in this book and in the advanced poultry project manual.

The 4-H poultry project involves several activities; some require owning a bird, and some do not (See Appendix A). No matter what your level of interest, this book will introduce you to many facts about poultry and help you learn more about these animals. Let's take a look at the amazing and fascinating biological creatures called **poultry**.



Poultry Production Concepts

In the sixth grade animal science book, you learned some basic facts about animals. These concepts will be further explored here, with specific information about how they apply to poultry. First, a short glossary of terms referring to birds:

Rooster (Cock) = Adult male bird

Hen = Adult female bird

Cockerel = Immature male bird

Pullet = Immature female bird

Chick = Young male or female chicken

Broiler = A male or female chicken less than eight weeks of age produced for meat

Breeder = An adult male or female chicken used to produce fertile eggs

Layer = A hen used to produce eggs for human consumption

Poult = A young turkey

Tom = Adult male turkey

Capon = A castrated male chicken

Drake = A mature male duck

Gander = A mature male goose

Anatomy

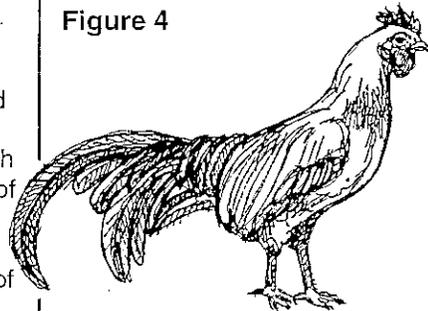
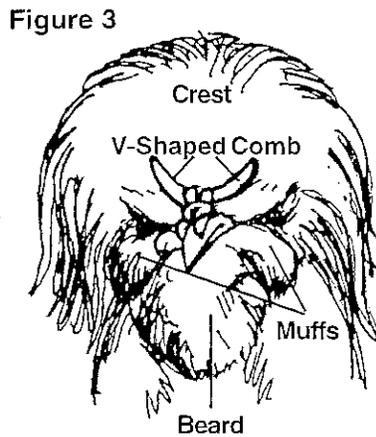
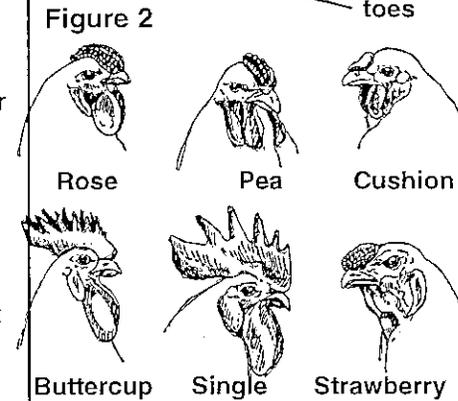
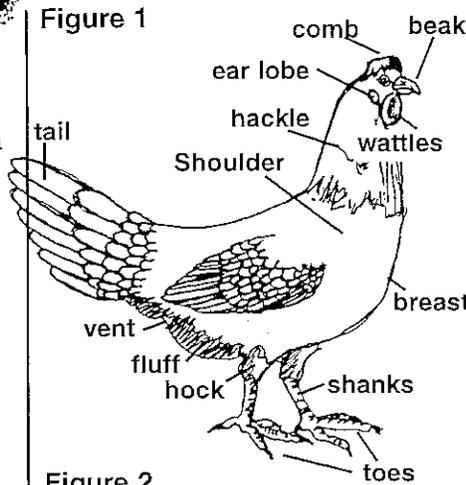
The chicken has several interesting exterior features (see Fig. 1). The comb and wattles of a chicken function as a cooling system. Chickens do not sweat like some animals. They lose heat by circulating blood throughout the comb and wattles. This process is much like the cooling of an engine by the radiator. There are several different types of combs. Some are shown in Figure 2. The earlobe of the bird does not stand away from the head as in other animals. Just beneath the ear is a flat piece of skin called the earlobe. The earlobe color can tell you what color egg a hen will lay. If the earlobe is white, her eggshells will be white. A hen with red earlobes will lay brown-shelled eggs.

Feathers serve as protective covering for the bird. These insulate the bird from cold, prevent the skin from getting wet and can be used for flight. Each region of feathers is defined by a special term (see Fig. 1).

Some birds also have special feathers about the head. These include crest, beards and muffs. Some examples are shown in Figure 3.

Genetics

When you look around today, you can find chickens with many different physical characteristics. Feather color, size, body shape and skin color are examples of phenotype. The development of these different phenotypes was accomplished through genetic selection. Remember, all chickens are thought to have originated from the red jungle fowl (Fig. 4). Few of today's chickens look much like this, but through the process of genetic selection and breeding, more than 350 purebred breeds and two major commercial types of chickens have been developed from this one ancestor.



Activities

1. List four types of birds raised for their meat.

- 1.
- 2.
- 3.
- 4.

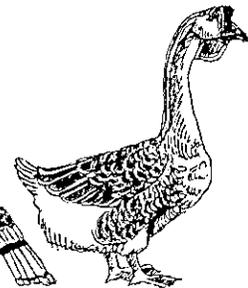
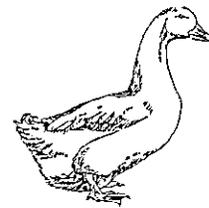
2. List five of your favorite foods which contain eggs.

- 1.
- 2.
- 3.
- 4.
- 5.

3. Identify the following pictures of adult male birds:

Tom
Gander

Drake
Rooster



Purebred Exhibition Poultry Production

In 1873, the American Poultry Association (first livestock association in North America) was organized to establish standards of genetic excellence and develop a system of classifying breeds of chickens. A system of three categories is used to classify chickens:

1. **Class**
2. **Breed**
3. **Variety**

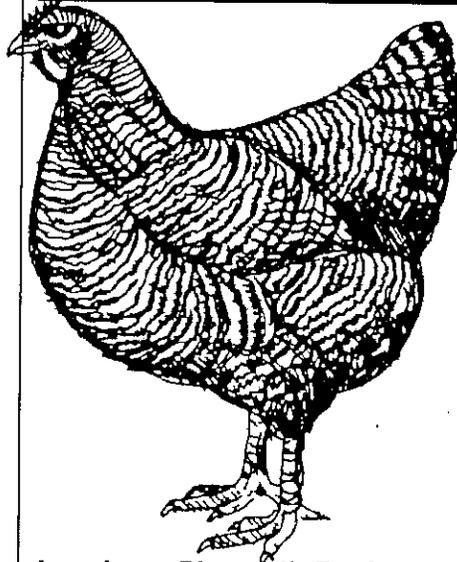
A class is a grouping of breeds according to the geographic area of their origin or similar characteristics. Breed refers to a group of birds with similar physical characteristics. Birds of the same breed when mated produce offspring with the same characteristics. A variety is a sub-division of a breed. Varieties within a breed have the same physical shape and features but are separated by comb type or feather color. Examples of classes, breeds and varieties are shown in Table I.

The term bantam refers to true-breeding miniature chickens. One breed of bantams exists for almost every breed and variety of large chickens. There are also some breeds of bantams with feather color and characteristics not found in larger chickens. Bantam chickens are one-quarter the size of their larger counterparts. Bantams have a special appeal to many people, especially to those who live in urban areas. These purebreds are friendly, hardy and are usually raised for exhibition or hobby.

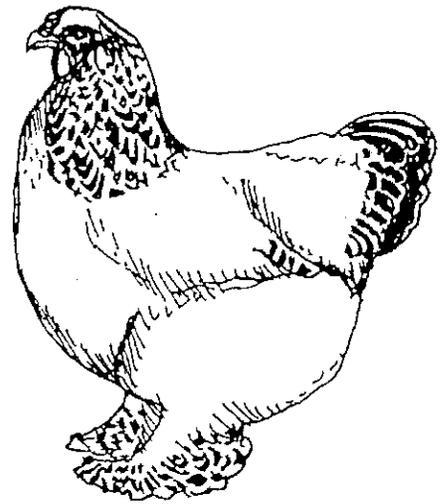
For more information about breeds, varieties and characteristics of chickens, search the local library for "The American Standard of Perfection." This book contains descriptions and photos of all recognized breeds of domestic chickens.

Table I. Examples of Purebred Class, Breed and Variety

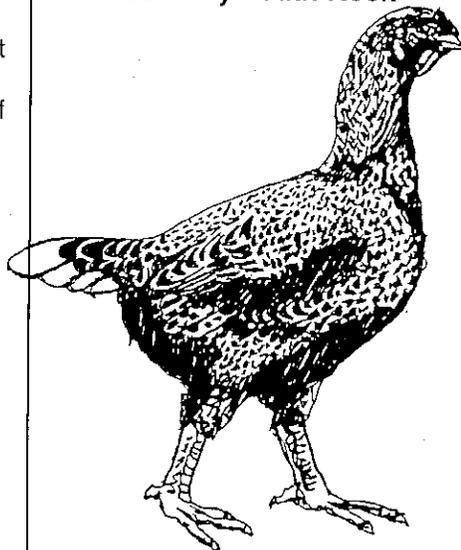
Class	Breed	Variety	Comb	Shank	Feathers
American	Plymouth Rock	White	Single		No
American	Plymouth Rock	Barred	Single		No
American	Wyandotte	Silver-Laced	Rose		No
Asiatic	Cochin	Black	Single		Yes
Asiatic	Brahma	Buff	Pea		Yes
English	Cornish	White-Laced Red	Pea		No



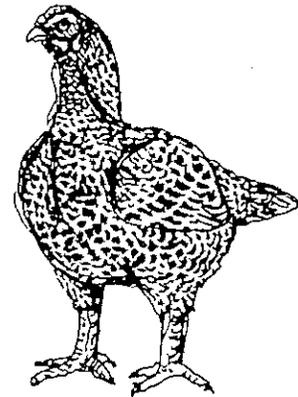
American- Plymouth Rock



Asiatic-Brahma



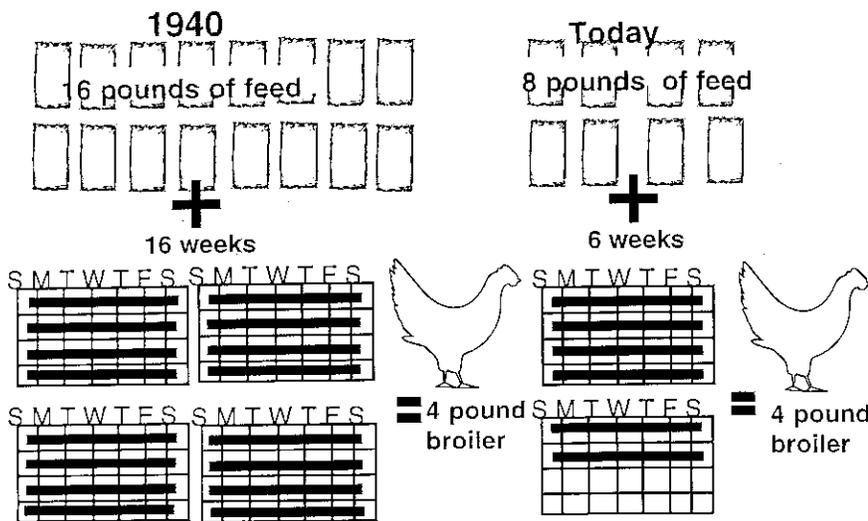
English-Standard Cornish



English-Bantam Cornish

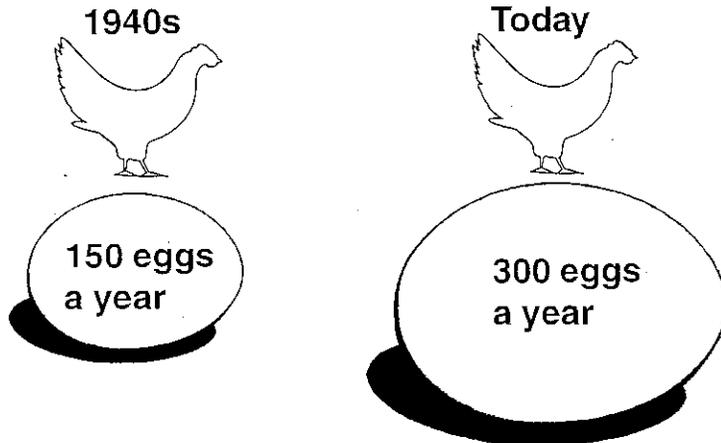
Commercial Broiler Production

Have you tried a fast-food broiler sandwich? Broiler refers to a young chicken produced for meat. You may also hear someone use the term fryer. Both terms refer to the most commonly marketed form of chicken. The genetic background of today's broiler is a mixture of several purebred breeds. Crossbreeding and selection of the Plymouth Rock, Cornish and other large meaty breeds over the years has led to the commercial stock used to produce today's broilers. This genetic selection has helped to decrease the length of time necessary to produce a 4-pound broiler. In 1940, it took 16 weeks and almost 16 pounds of feed. Today broilers are produced in six weeks with eight pounds of feed. Genetic selection continues to be important in the broiler industry to maintain and improve this modern chicken.



Commercial Egg Production

Commercial egg producers have also used genetic selection to produce special hybrids with amazing egg-laying abilities. These hybrids were developed primarily from the White Leghorn, a lighter-weight chicken with high egg-producing abilities. Today's commercial layer can produce more than 300 eggs per year. In the 1940s, the average layer produced fewer than 150 eggs per year.



Activities

1. Fill in the blanks:

A. Breeds originating from the same geographic area are called a _____.

B. Wyandottes have a _____.

comb.

C. Birds within a breed but with a different feather color are a sub-division called _____.

D. Specific information about breeds, varieties and characteristics of chickens recognized by the American Poultry Association can be found in the publication _____.

2. Matching

- A. 16 B. 6 C. 300
- D. 150 E. 8

_____ 1. Pounds of feed needed to produce a 4-pound broiler today.

_____ 2. The number of eggs produced by the average laying hen today.

_____ 3. The number of weeks required to produce a 4-pound broiler in 1940.

_____ 4. The number of weeks required to produce a 4-pound broiler today.

Nutrition and Feeding

Birds require proper nutrition, just like other animals. The health and performance of a bird depend on the feed or nutrients it eats. The amount and type of feed a bird consumes greatly influences its performance. Special rations are produced for each type and age of bird. These rations contain many different ingredients to provide specific nutrients.

Nutrients

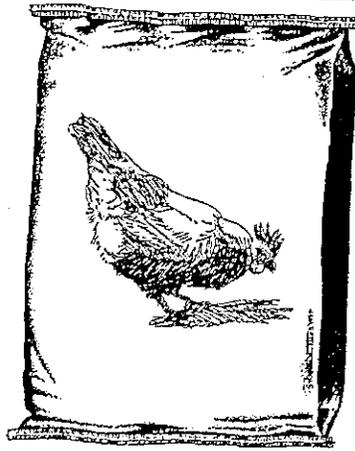
Six types of nutrients are required by all animals. They are:

1. Water
2. Proteins
3. Carbohydrates
4. Lipids
5. Minerals
6. Vitamins

Water is made up of hydrogen and oxygen, in a two to one (2:1) ratio. This means one oxygen is attached to two hydrogens. You may see it represented as (H₂O). Water is one of the cheapest nutrients. Often it is also the one given the least amount of attention. Most of the body fluids are water based, such as blood, sweat, tears, saliva, urine, etc. The bird's body is 92% water. Birds need a constant, clean source of water. Water is required for many bodily functions, such as

1. Maintenance of body temperature
2. Production of eggs
3. Digestion and absorption of feeds
4. Lubrication of feed by saliva
5. Transport of nutrients via blood

Proteins are used to form many body tissues such as muscle, red blood cells, feathers and toenails. Proteins are made up of individual building blocks known as amino acids. Amino acids contain carbon, hydrogen, oxygen and nitrogen. The combination of amino acids, in different ways and amounts, determines the specific protein. More than 1000 proteins are found within the animal body. For the bird's body to use these proteins, they must be broken down into amino acids during digestion.



The amino acids are absorbed and reformed into proteins within the body cells.

Carbohydrates are made up of carbon, hydrogen and oxygen. The basic unit for most carbohydrates is glucose. Sugars are one common type of carbohydrate. Refined sugar like table sugar is known as sucrose. Fruits taste sweet because of the carbohydrate fructose. Starches are another type of carbohydrate. Starch is the primary component of corn, milo, potatoes, beans, breads and pasta. Carbohydrates are primarily used for energy. Energy can be thought of as power or ability to do work. Energy is required for such activities as walking, clucking, producing eggs, digesting foods, etc.

Lipids, also known as fats, are made of carbon, hydrogen and oxygen. The basic unit of all fats or lipids is fatty acids. Just as amino acids are common to all protein, fatty acids are common to all lipids. Lipids contain two and one-half times as much energy as carbohydrates but are more difficult to digest and use.

Vitamins are special compounds needed in small amounts for specific bodily activities. Vitamins help regulate many processes. Vitamin D is necessary for bone and shell formation. Vitamin K is required for proper blood clotting.

There are two general types of vitamins: those which can be dissolved in water (water-soluble) and those dissolvable only in fat (fat-soluble).

Water-soluble	Fat-soluble
Vitamin C	Vitamin A
B-complex vitamins	Vitamin D
	Vitamin E
	Vitamin K

Minerals are also divided into two general groups based on the relative amount needed by the body. Macro-minerals are those minerals needed in relatively large amounts; micro-minerals are needed in small amounts. Examples of each are:

Macro-minerals	Micro-minerals
Calcium (Ca)	Iodine (I)
Phosphorus (P)	Zinc (Zn)
Potassium (K)	Copper (Cu)
Sodium (Na)	Cobalt (Co)
Chlorine (Cl)	Selenium (Se)

Activities

1. What element(s) do all nutrients, except minerals, have in common?

2. Complete the nutrient terms:

_ _ _ e i _

_ a r _ _ _ y _ _ _ e

_ i _ _ _ s _ _ _

_ h _ _ p _ _ r _ s

_ _ t _ r

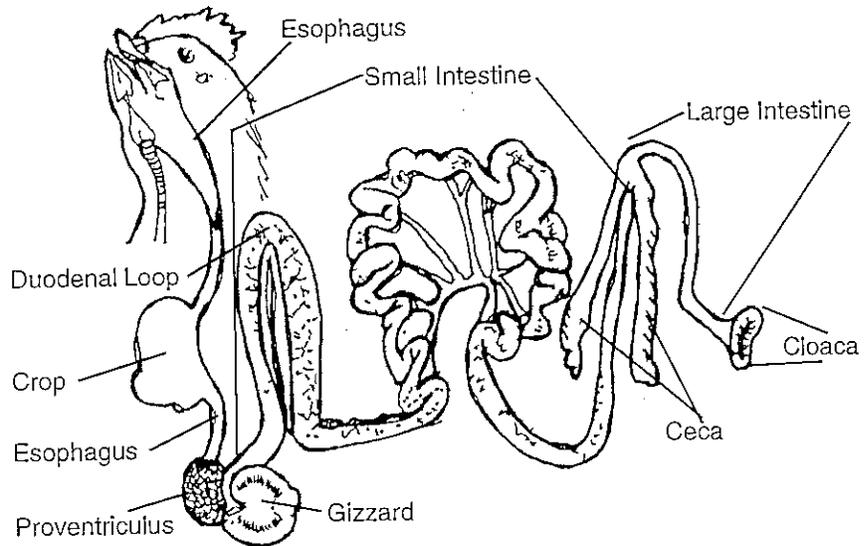
Digestion

Once food is consumed, the bird's digestive tract must break it down into nutrients the body can absorb. Birds are classified as monogastric or simple-stomached animals, but their digestive system has several unique features. The mouth of the bird differs from that of other animals. The bird does not have lips or teeth. Birds have a hard beak for grasping food. When food is brought into the mouth, it is moistened by saliva and swallowed. The esophagus of the bird has a special feature, called the crop, where feed can be stored for a short period.

The stomach of the bird is divided into two sections: the proventriculus, or true-stomach, and the ventriculus, or gizzard. The proventriculus is a glandular region like the stomach of most monogastrics. The glands of the proventriculus produce digestive juices which begin the breakdown of feeds into nutrients. The ventriculus, or gizzard, is a muscular region where feed material is ground. It was once a common practice to feed grit to birds to help the gizzard grind feeds. Today we grind the ration before feeding, so it is not necessary to add grit to the diet.

Ground food mixed with saliva and digestive juices called chyme moves from the gizzard into the small intestine. Within the small intestine, juices from the pancreas, liver and wall of the small intestine are added to the chyme for further breakdown of the feed. As this breakdown occurs, individual nutrients move across the intestinal wall into the blood and body tissue. This process is called absorption.

Following absorption, these individual nutrients are carried by the bloodstream to all body cells: Food and juices not



absorbed from the small intestine move into the large intestine. The bird has two special features of the large intestine called ceca. These are long narrow pouches where special bacteria use the undigested material. Some of the by-products of this bacterial activity can be absorbed by the bird. Most of the water in the digestive system is absorbed in the large intestine. The remaining material in the large intestine is released from the body as manure.

Nutrient Requirements

The amount of each nutrient needed by a bird is determined by the type of bird and its activities. Several tables of nutrient requirements by bird and activity have been developed. The National Academy of Science publishes an updated list of nutrient requirements by species based on research conducted at university and private laboratories. Using these tables we can determine how much of a nutrient a particular bird needs. Table III lists nutrient requirements for different birds performing different activities.

Table III. Examples of Nutrient Requirements

Bird	Purpose	Protein (%)	Calcium (%)
Chicken	Meat Production	18-21	.9-1.0
Turkey	Meat Production	20-28	1.2-1.3
Chicken	Egg Production	16-18	3.0-4.0

Feeds

The feeds or diet the bird consumes must contain the basic nutrients. Feeds are chemically analyzed to determine the amount of each nutrient they contain. By knowing the amount of a nutrient in each feed, we

can calculate the amount of feed needed to meet the bird's nutrient requirement. Tables listing the amount of nutrients in a feed are published. These can be used to determine which feeds need to be combined to give the right amount of nutrients. Some feeds used in poultry rations are in Table IV.

Most birds today are fed a complete diet containing all of the nutrients required in the proper amounts. These complete diets are made up of several different feeds in different amounts to meet the nutrient requirements. Poultry rations are prepared by grinding and mixing or blending the feed ingredients, as you do when making a cake. Each mouthful of diet the bird consumes contains the right amount of nutrients.

Table IV. Sources of Nutrients Required by Poultry

Nutrient	Source
Protein	Soybean meal, corn gluten meal, fish meal, blood meal, meat meal and feather meal
Carbohydrates	Corn, milo, barley, rye, oats and wheat
Fats	Animal tallow, corn oil and other vegetable oils
Minerals	Meat and bone meal, fish meal, limestone, salt

Rations

A ration refers to the combination of feeds or ingredients fed a bird daily. To meet the daily nutrient requirements of a bird, several feeds must be mixed together. In this ration, eight different ingredients are necessary to meet the nutritional requirements of the broiler.

Broiler Starter Ration

Ingredient	lbs/100 lbs.
Corn	55.30
Soybean Meal	30.25
Corn Gluten Meal	7.50
Dicalcium phosphate	.50
Ground Limestone	.80
DL-Methionine	.04
Animal Fat	5.30
Salt	.35

Nutrient	Ration	Requirements
	%	%
Protein	24	≥ 22
Fat	8	≤ 10
Fiber	2	≤ 3
Calcium	= .8	
Phosphorus	.4	= .4
Methionine	.4	= .4

Activities

1. Circle the term or phrase which does not belong:

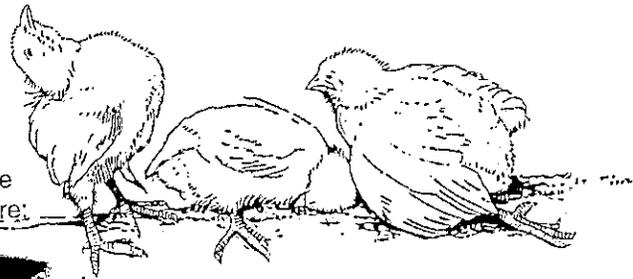
- A. Protein, Water, Vitamines, Fats
- B. Carbon, Nitrogen, Oxygen, Water
- C. Calcium, Sodium, Chlorine, Cobalt
- D. Proventriculus, Gizzard, Ear, Small Intestine
- E. Limestone, Milo, Corn, Barley
- F. Digestion, Filtration, Absorption, Nutrition

2. What do each of the three similar terms in the preceding exercises have in common?

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____

Health Care

Good management is essential for poultry health. Raising many birds together in close quarters produces an environment suited to rapid spread of diseases. Prevention is the key to a healthy bird flock. Sanitation is important to reduce disease. Keeping the litter dry by removing the wet and adding fresh material will help reduce problems. Removal of wire and sharp or foreign objects will prevent injuries. Vaccination for specific common diseases is also an effective preventive measure. Diseases for which birds should be vaccinated are:



Common Diseases of Poultry

Disease	Symptoms	Treatment	Prevention
Pullorum	Acute, white diarrhea Swollen hock joints	Furazolidone	Blood Testing Breeding Flock
Fowl Pox	Scabs about head & face Sores in mouth & nasal passage	None	Vaccination
Coryza	Nasal discharge Watery eyes	Sulfonamides	Sanitation
Coccidiosis	Bloody dropping, poor appetite, poor feathers	Coccidiostat	Sanitation

Poor management can result in unhealthy chicks

It is often difficult to tell when a bird is sick. Close observation of the bird's behavior and feeding activities will provide clues to its health. When a disease problem is suspected, note the symptoms. Talk with a professional (county agent, 4-H agent or veterinarian) for proper diagnosis and treatment.

Parasite control is also important in poultry flocks. Birds easily contract internal parasites from others by pecking and consuming fecal material. Some common internal parasites and their treatment are:

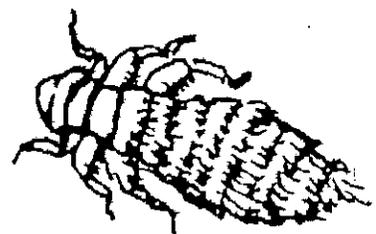
Common Internal Parasites of Poultry

Parasite	Site of Infection	Treatment
Large Roundworm	Intestines	Anthelmintics
Cecal Worm	Ceca	Anthelmintics
Capillaria Worm	Small Intestine	Anthelmintics
Tapeworm	Intestine	Anthelmintics

External parasites are also easily transferred by close contact. Common external parasites and treatments are:

Common External Parasites of Poultry

Parasite	Site of Infection	Treatment
Mites	External Surfaces	Sevin Dust
Lice	Body, Feather Shaft	Sevin Dust



Activities

1. Circle the hidden words in the following puzzle:

Cecal Worm	C	M	R	O	W	E	P	A	T	I	A	G	E
Coccidiosis	U	O	K	E	A	J	P	A	E	Z	A	J	Q
Coryza	A	X	C	Y	E	I	A	S	G	G	E	M	E
Eggs	Q	O	E	C	U	A	K	Z	T	A	G	A	S
Fowl Pox	X	H	C	C	I	I	E	A	Y	G	Z	A	U
Louse	O	G	A	L	O	D	M	A	U	R	D	A	O
Mite	P	I	L	G	A	Q	I	K	A	E	O	Y	L
Tapeworm	L	J	W	X	E	I	T	O	U	A	Q	C	D
	W	E	O	E	A	O	E	U	S	S	I	A	K
	O	X	R	C	E	K	A	Z	E	I	G	A	P
	F	Z	M	C	P	A	Y	E	A	O	S	G	I

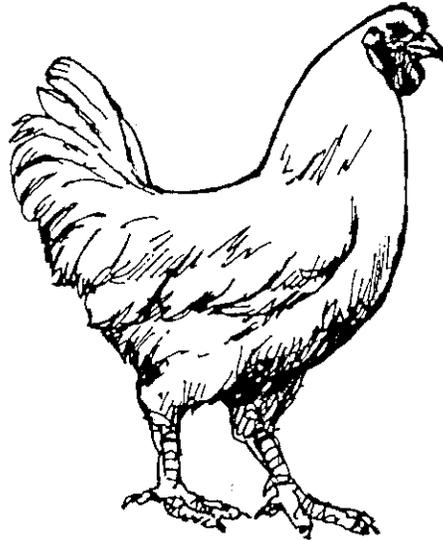
Poultry Projects

There are three major projects which require bird ownership. These projects correspond directly to three primary segments of the poultry industry: broiler production, egg production and exhibition bird production.

Each project involves a commitment of time and responsibilities. Birds must have special housing and care daily. Ask your 4-H agent for help in deciding which project or projects to complete. The rewards of a successful poultry project can include trophies, ribbons, money and more self-esteem. Begin planning today a project which will be rewarding and fun.

Broiler Project

This project gives 4-H'ers the opportunity to provide a nutritious inexpensive meat for the family and to compete in broiler shows. Check with your agent to schedule this project to be eligible to compete in one of the parish and/or state broiler shows.



Egg Production Project

This project involves the production of table eggs for consumption. Certain breeds of birds have better egg-laying abilities. These include the Leghorn, Minorca, Andalusian and Ancona. With most breeds, birds begin egg production at 21-24 weeks of age. This project can be effectively combined with an exhibition project if you use purebred stock.

Exhibition Bird Project

This project involves raising birds for exhibition. Many individuals enjoy raising purebred poultry for show. Bantams are especially popular in urban areas because of their small size and showy colors. Often exhibition birds become pets or companion animals for their owners. When choosing a purebred breed and variety for exhibition, refer to the American Poultry Association and American Bantam Association's Standard of Perfection publications. These books contain written