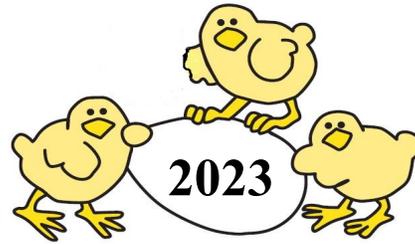


POULTRY

Allen County 4-H

Due May 31 in the Extension Office



\$1.00

Level 2 – Grades 6-7-8

What you will do in this project:

- Enroll in the 4-H program by January 15.
- Complete the project by answering at least two of the activities in this activity sheet and turning it into the Extension Office **by May 31, 2023** or earlier. This activity sheet consists of activities, and a record sheet.
- Attend County 4-H Poultry workshops when offered.
- Refer to the Allen County 4-H Rules Book for a complete listing of all regulations concerning this project.
- You can exhibit in all 9 Classes that are offered, no more than 2 pens per class.
- You may exhibit a Poultry Education poster in addition to the birds.
- All birds must be in your possession by May 15 with the exception of broilers that are hatched at the end of May.
- Complete FairEntry online by May 19, 2023.
- To exhibit beef cattle, dairy cattle, swine, sheep, meat goats, dairy goats, poultry and rabbits, 4-H members must be certified through the Youth for the Quality Care of Animals program. This is an annual program that can be completed via online modules or in-person trainings. For more information about in-person trainings in your county, please contact your County Extension Office. More information about YQCA is available at <http://yqca.org/>. **Attach a copy of YQCA card.**

Management Tips:

- Provide clean, freshwater to your birds at all times. In the winter, warm (but not hot) water will be needed. Birds on average will drink 1-2 cups a day. Check their water at least twice a day – more often on hot days.
- One chicken eats about 2 pounds of feed each week. 12 chickens eating two pounds a week would eat 24 pounds week. (12 birds x 2 lbs = 24 lbs)
- A feed ration of at least 16% protein for the mature chicken is needed.
- Put at least a 4 inch layer of bedding on the floor for your birds and keep dry. Spread fresh bedding on the top. Clean area completely at least once a year with a solution of 2 tablespoons of chlorine bleach into 2 gallons of boiling water. Scrub with a broom. Ventilate well to dry.
- Birds should be washed before bringing to the fair with a solution of warm water and 2 table spoons of chlorine bleach in a five gallon bucket.

4-H Member: _____ 4-H Club: _____

Grade in School (January 1, 2023) _____ Years in this project _____

Signature of 4-H Member verifying that you have completed these activities:

Signature of Parent that you have reviewed this information:

4-H Animal Care:

The Indiana 4-H program strongly supports positive animal care and strongly opposes animal abuse. 4-H is also dedicated to the mission of developing youth and volunteers through "Learning by Doing" programs.

4-H livestock projects teach life skills such as acquiring knowledge, making decisions, and applying leadership skills.

- When working and caring for animals, it is important to insure that appropriate safety measures are in place for both the animals and the persons who care for them. Therefore, there is no substitute for knowledge, common sense, and experience.
- Animal handlers should study and learn to anticipate an animal's reaction and try and avoid problem situations. It is most important that 4-H members understand an animal's behavior so one can "outsmart" not "out-muscle" an animal. Foremost in the 4-H'er mind should always be safety of the handler and the animal. Moving animals is more of an art than a science. Movement of animals requires planning and knowledge to accomplish it with the least amount of time, effort and stress to the animal.
- An animal's good health is often directly related to the environmental factors associated with its living space. The presence of predators, dust, odors, pests, temperature, and humidity has a direct effect on an animal's well-being.
- Animals react favorably to daily care and comfortable housing. Consideration should also be given to specific animal needs such as size of their housing space, lighting, and ventilation. The best facilities and equipment cannot and should not be a substitute for daily observation and careful attention to signs of illness, injury, and/or unusual behavior.
- Frequent consultation with your veterinarian is a must. Reasonable attention must always be given to the use of drugs and their approved withdrawal times.



Understanding the information included on poultry feed tags will help you identify the ingredients and their use in a ration, understand the nutrient requirements of a bird and be able to select the best feed for your birds. You'll also learn what information is included on the labels of the food you eat. Include ration tag from your feed, if you grind your own list ingredients and percentages in activity.

Feed Nutrients

- All rations include five basic nutrients: protein, energy (carbohydrates and fats), minerals, vitamins and water
- Protein supplies the materials to make body tissues like muscle, internal organs, bones, blood and feathers
- Energy from carbohydrates and fats enhance movement and produce heat to keep the body warm. Excess energy from feeds is stored as fat
- Minerals help build bones and form egg shells
- Vitamins are required for healthy eyes, nasal passages, lungs, blood and strong bones
- Water is the most important nutrient. It is necessary for digestion, carrying food nutrients and waste products, cooling the body and lubricating the joints
- A broiler can gain one pound for every 1.6 pounds of feed eaten

Carefully check the poultry feed tag shown on the next page. Answer the questions about the tag in the space shown. If you have a different feed tag to use, tape it over the tag shown and answer the questions based upon your tag.

50 Pounds Net Weight
 BROILER STARTER
MEDICATED
Poultry Feed

As an aid in prevention of coccidiosis in broiler chickens where immunity to coccidiosis is not desired.

Active Drug Ingredient

Amprolium.....0.125%

Guaranteed Analysis

Crude Protein, Not less than.....22.0%

Crude Fat, Not less than2.2%

Crude Fiber, Not more than5.0%

Ingredients

Ground Grain Products, Plant Protein Products, Processed Grain By-Products, Animal Protein Products, Forage Products, DiCalcium Phosphate, Calcium Carbonate, Roughage Products, Monoammonium Phosphate, Choline Chloride, Salt, Methionine Supplement, Sodium Selenite, Manganous Sulfate, Zinc Sulfate, Ferrous Sulfate, Mineral Oil, Niacin Supplement, Vitamin E Supplement, Riboflavin, Calcium Pantothenate, Menadione Dimethylpyrimidinol Bisulfite, Biotin, Copper Sulfate, Vitamin B12 Supplement, Vitamin A Acetate, Vitamin D3 Supplement, Folic Acid, Ethoxyquin (A Preservative), Pyridoxine Hydrochloride, Thiamine, Ethylenediamine Dihydriodide

Feeding Instructions

One Feed Feeding Program

Feed this feed continuously to broiler chickens as the sole ration from day-old until market. This feed requires no withdrawal prior to marketing.

Caution

This feed is not to be used as a treatment for outbreaks of coccidiosis. Exposure to one or more species of coccidiosis may over expose.

Feed Tag Information

Type of Poultry _____

Purpose _____

Pounds _____ % Protein _____

Three major ingredients: _____

Nutrients

Major energy ingredients (carbohydrates and fats)

Major protein ingredients

Major mineral ingredients

Major vitamin ingredients

By-products present

Medication included

Water source _____



What are some observations you can make when you see a chicken or other type of bird? What are some skeletal similarities you see between birds and mammals? What are some differences? Poultry are **bipeds**. That means they stand and walk on two legs, just as humans do. What other animals walk on two legs? If we look at the skeleton of a bird we would see it is similar to that of most mammals (with a few exceptions). The first difference is a

bird has a pair of extra bones in the shoulder area, called the **caracoids**. These bones allow the wings to move and provide additional support for the wings. The second difference is in the spine. The neck bones, or cervical vertebrae, which connect the body to the head are formed in an S-shape. This S-shape acts as a spring when a bird lands on the ground and provides a cushion to the head. The third difference between the skeletal structure of a bird and mammals is the back vertebrae are very strong because they are fused together, providing a strong support for the wings.

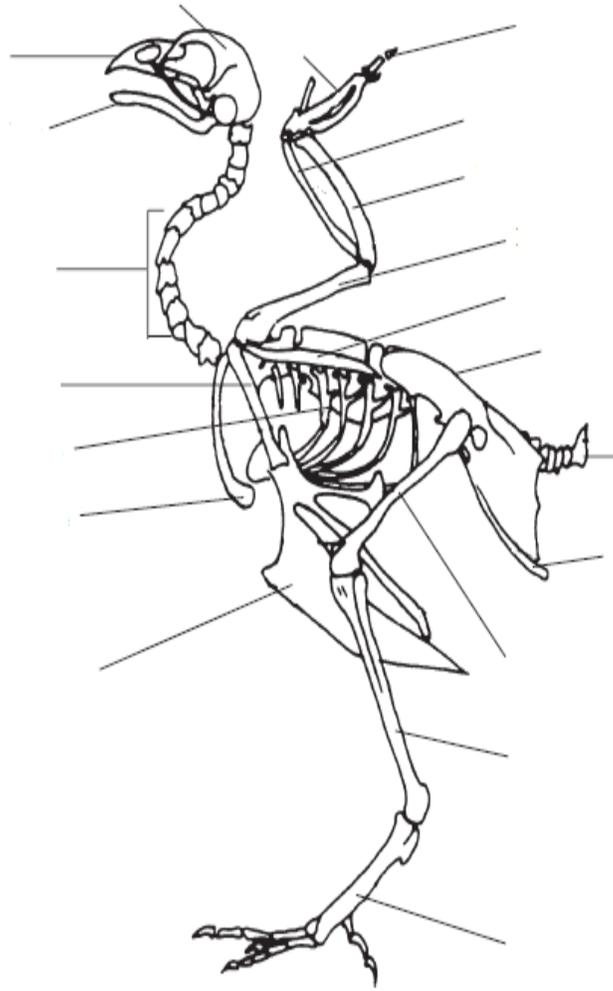
The skeletal system is closely connected to the respiratory system. Some of the bird's bones are hollow and are connected to the respiratory system. Those bones serve as a reservoir for air. This makes the bird lightweight for flight. These hollow bones are called **pneumatic** bones. Pneumatic bones in the bird include the skull, humerus, keel, clavicle and lumbar and sacral vertebrae. If necessary, a bird could breathe through an open bone if its air supply was cut off to its trachea, or windpipe. Other functions of the skeleton include attachment of muscles, protection of the vital organs and a source of red blood cells. Egg-laying hens also have **medullary** bones. The marrow cavity of these bones, which include the femur, tibia, sternum, ribs and scapula, contain the honeycomb lacing of bone spicules or tiny spikes, that provide a source of calcium which the hen uses to calcify shells. This type of bone is usually absent in males or nonlaying females.

The **mandible** and **incisive** bones make up the beak of the chicken and turkey or the bill in waterfowl. The shape of the beak or bill is influenced by the bird's natural diet. Chickens and turkeys have a long, pointed beak which allows them to obtain their natural diet of seeds and insects. The wing of a bird consists of the **humerus, radius, ulna, metacarpus** and **phalanges** bones. The phalanges and metacarpus bones are similar to the fingers and wrist bones in humans. The **clavicle** is the well-known wish bone. The **sternum** or breast bone is the largest bone in the fowl. Waterfowl have a much larger and flatter sternum than chickens and turkeys, as it provides protection to the vital organs when waterfowl land on water. The **vertebrae** from the base of the neck to the base of the tail are fused with the **ilium** and **ischium** to provide rigidity to the skeleton for flight. Because the egg passes between the two pubic bones which are located below the vent of the bird, the distance between them is used as an indicator of egg production. The **femur, fibula, tibia** and **metatarsus** bones make up the leg of the bird. The metatarsus bones are comparable to the ankle bones in humans. Most breeds or varieties of chickens and turkeys have four toes, a few have five. The shape and structure of the feet and toes of birds depends on their natural diet. For example, grain eaters, such as chickens and turkeys, have long sharp toes for scratching the soil for seeds and insects. Waterfowl, such as ducks and geese, have webbed feet for paddling in the water. Most species of birds have seven pair of ribs. The ribs are flexible because they expand and contract as the bird breathes.

Let's take a look at the bird's skeleton and see how many parts we can identify. How many bones do you think are the same as yours?

Use the word bank below to identify the bones of this skeleton.

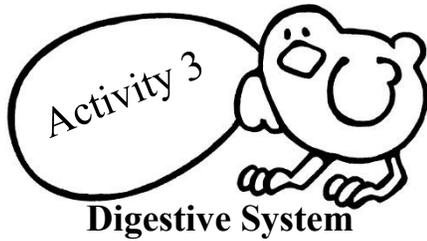
skull
phalanges
sternum
metacarpus
coracoid
ulna
clavicle
radius
cervical vertebrae
humerus
mandible
femur
scapula
incisive
ilium
rib
tail bone
pubic bone
metatarsus
tibia



Share:

1. What bird skeleton parts did you already know? Why?
2. What bird skeleton parts were hard to identify? Why?
3. What are pneumatic bones and what do they do?
4. What are medullary bones? List some.
5. How is a bird's skeleton adapted for landing purposes?
6. How does the skeletal structure of a bird differ from that of mammals?
7. What bird characteristics do you think were important in helping to develop the airplane?





The **digestive system** consists of the parts of the body which are involved in the chewing and digesting of feed. This system is also responsible for moving the digested food particles through the chicken's body and absorbing the products of digestion. Chickens have certain special organs that are not found in other animals. Functions of the chicken's digestive system are to get the food into its mouth with its beak or bill (**prehension**), storage of the food (in the crop) until it can be digested, physical breaking down of the food particles by the gizzard (**mastication**), chemical breaking down of the food

nutrients into the simple forms (**digestion**), passage of the simple forms across the intestinal wall to the blood vessels (**absorption**) and storage and elimination of the wastes.

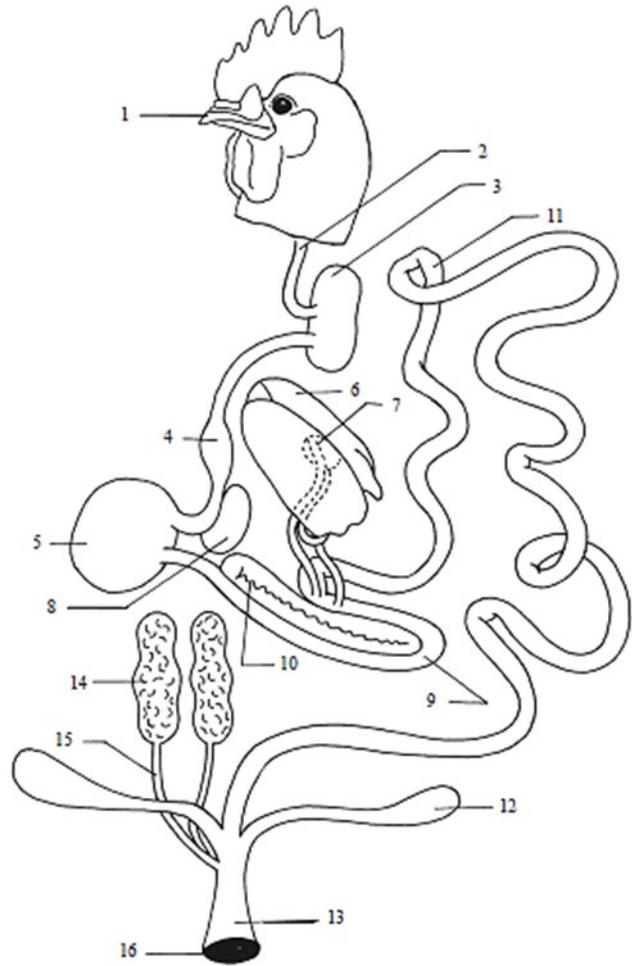
The structure and length of the digestive tract of an organism is determined by what type of food it eats. Meat and grain eaters (**omnivores**), such as birds, dogs, cats and humans, have shorter digestive tracts than cattle or sheep, which are **herbivores**, animals that eat complex plant materials. For example, the length of the bird's digestive tract is approximately four times longer than its body. The digestive tract of a sheep measures approximately 27 times its body length. The longer tract is necessary to allow a longer time for digestion to take place.

Chickens, like humans, are a **monogastric**, which means they have a simple stomach. Cattle and sheep are **polygastric**, or ruminants, because they have four stomachs. The major parts of a chicken's digestive system and their functions are:

1. **Mouth**—The prehension or acquiring of food by birds differs from mammals because birds do not have teeth, lips or cheeks. The shape of the bird's beak or bill is related to the type of food it eats (for example chickens and turkeys have pointed beaks because they are grain eaters.) A chicken's tongue is pointed with barb-like projections on the back and hard projections on the roof of the mouth, which serve to force the food toward the gullet (or esophagus) of the bird.
2. **Gullet (or esophagus)**—The gullet is a flexible tube, next to the windpipe, which connects the mouth to the crop. (Like a human's throat.)
3. **Crop**—This is the first storage site for the feed that is eaten. The crop stores and softens the food. The time food spends in the crop depends on the type of food and how much food is in the gizzard. Whole grain is kept in the crop longer than ground grain.
4. **Glandular Stomach**—The glandular stomach or proventriculus is the segment which contains cells that secrete, or give out, digestive juices that start the chemical breakdown of the food particles.
5. **Gizzard**—The gizzard serves as the bird's teeth to grind the food. It is composed of a thick, powerful muscle and is lined with a thick, tough lining. Birds eat small rocks or pebbles called grit that they use to grind the food.
6. **Small Intestine**—The small intestine is a section that extends from the gizzard to the junction with two blind pouches, called the **ceca**. The first section is the duodenal loop that surrounds the **pancreas**. The pancreas secretes insulin which regulates how the body uses sugar. It also secretes pancreatic juice that aids in the digestion of fat, starches and protein. The main functions of the small intestine are secretion of digestive juices and absorption of nutrients.
7. **Ceca**—The two ceca, sometimes called blind guts, mark the junction of the small and large intestines. Even though a chicken can live without its ceca, some digestion takes place here. The ceca is a favorite site for multiplication of parasites such as cecal worms and protozoa, like the blackhead organism.
8. **Large Intestine**—The large intestine is very short in birds and its major functions are to reabsorb water and store waste materials.
9. **Cloaca**—The cloaca is an enlarged part found where the large intestine joins the vent. Feces from the large intestine are passed out of the body through the vent. This is a common passageway for the ends of both the reproductive and digestive tracts.
10. **Liver**—The liver is an accessory organ to the digestive tract because it secretes bile, filters the blood and stores excess carbohydrates. The green colored **gall bladder** is embedded in the liver tissue. (The chicken has a gall bladder, but some other birds do not.) The liver has two bile ducts that carry the bile from the liver to the intestines. The right duct is enlarged to form the gall bladder, through which most of the bile passes and is temporarily stored. The **spleen** is a dark red organ next to the liver. Its main function is the destruction of red blood cells. The excretion of water and metabolic waste occurs largely through the kidneys. These wastes are filtered out as blood passes through the **kidneys**. The wastes are excreted as a whitish pasty substance that gives bird droppings their characteristic white color.

Match name with number

- ___ Beak and mouth
- ___ Ceca
- ___ Cloaca
- ___ Crop
- ___ Duodenal loop
- ___ Gall bladder
- ___ Gizzard
- ___ Glandular stomach
- ___ Gullet
- ___ Kidney
- ___ Large intestine
- ___ Liver
- ___ Pancreas
- ___ Small intestine
- ___ Spleen
- ___ Ureter



Share:

1. What was the easiest and most difficult part of the digestive system to understand? Why?

2. What are the four basic functions of a bird's digestive system?

3. How does a bird make food particles smaller to prepare them for digestion?

4. What conclusions can be made about a monogastric digestive system? (Efficiency, Capacity, Problems?)

5. How will understanding your digestive system help you eat the right foods?



ALLEN COUNTY 4-H POULTRY RECORD



Records serve as a way to measure your own success with a project. When answering these questions, you should be able to see where improvements can be made for next year and if you wish to continue with this project for another year.

Commercial					
Class	Breed	Date Purchased	Number Purchased	Cost of Birds	Number of Birds Dead/Lost
Broiler					
Turkey					
White Egg Layer (Over 6 Months)					
Colored Egg Layer (Over 6 Months)					
White Egg Pullet (Under 6 Months)					
Colored Egg Pullet (Under 6 Months)					

Exhibition					
Class	Breed	Date Purchased	Number Purchased	Cost of Birds	Number of Birds Dead/Lost
Standard Exhibition					
Waterfowl					
Bantams					

List the equipment/housing arrangements needed for your project. Include feeding equipment, bedding, housing, grooming tools, etc. that you use to care for your animal(s).

Item	Approximate Value

List the items you feed to your animals. Include type of feed, quantity, costs		
Type of Food	Amount Fed	Expense - Value of Feed

List veterinary expenses you had with this project (vaccinations, illness, health certificates, etc.)

List three new things you have learned about raising birds.

- a. _____
- b. _____
- c. _____

What resources did you use to gain more information about your animals? (List people, magazines, newsletters, web sites, etc.)

Did you give a demonstration in your local 4-H Club? Yes _____ No _____ If yes, list the date given, title of demonstration and number of people present.

List any tours, workshops, clinics, etc you participated in relating to this project.

**You may exhibit in all ten classes offered
Two Pen per Class.**

**Educational Poster exhibit is due and judged on designated date in exhibit building. Watch the
Clover Chronicle for this date.**

**** Copy of Receipt Showing date of purchase *MUST* be attached to these pages
for Broilers, Pullets and Turkeys.**

I understand that the 4-H Livestock Committee may assign a specific location or pen for my animal(s). I understand that I may be subject to additional pen fees due upon time of unloading for my animals.

I further understand that to exhibit at the Allen County Fair is a privilege and that I must adhere to all rules and regulations set forth by the Indiana Board of Animal Health for Exhibition, by the Purdue Extension Service 4-H Youth Development program and the Allen County 4-H Clubs, Incorporated.

4-H Member Signature: _____ Date: _____

____ Completed v2.4online enrollment by January 15, 2023

____ Completed Fair Entry on line by May 19, 2023

____ Copy of YQCA Certificate attached