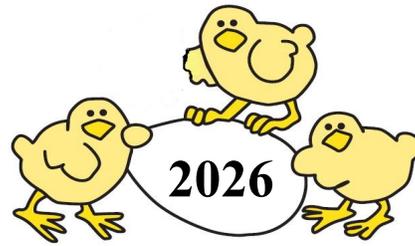


POULTRY

Allen County 4-H

Due June 04 in the Extension Office



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 June 8** 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 10 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 published deadline.
- 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, 2026) _____ 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.



A good poultry house protects the birds from the elements (weather), predators, injury and theft. Poultry require a dry, draft-free house. This can be accomplished by building a relatively draft free house with windows and/or doors which can be opened for ventilation when necessary. Build the coop on high, well-drained areas. This prevents prolonged dampness and water saturation of the floor of the coop and outside runs. Face the front of the coop, the windows and outside run to the south which allows the sun to warm and dry the coop and soil.

Allowing an adequate level of space per bird also helps keep the humidity level in the coop to a minimum. Keeping poultry totally confined together with fence and covered runs are your best protection from predators. If you are building a new facility, consider laying a concrete floor, and start the wall with one or two concrete blocks. This prevents rodents, snakes, and predators from digging under the walls and the floors. Windows and doors must be securely covered with heavy-gauge mesh wire or screening when opened.

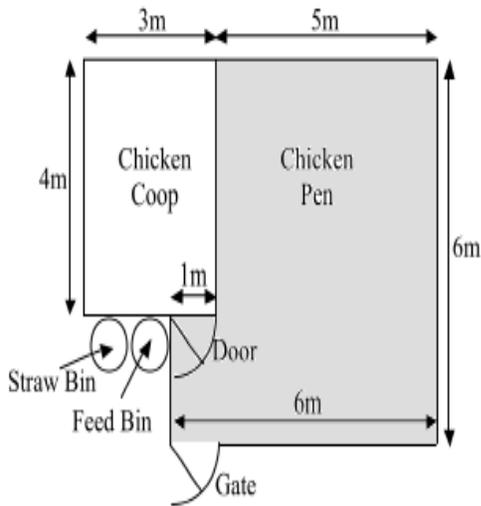
With outside runs, bury the wire along the pen border at least 12" deep, and toe the fence outward about 6 inches. This stops most predators from digging under the fence. Animals always dig at the base of a fence. By toeing the fence outward and burying it, the predator digs down right into more fencing. Some people run electric fencing around the outside of their pens 4" off the ground about one foot from the main fence to discourage predators. If your outside runs are not predator-proof, you need to lock up your poultry before dark.

To prevent problems with hawks and owls, cover your outside runs with mesh wire or netting. A good ground cover of millet, broomcorn, sorghum or other tall leafy vegetation also provides cover for the birds to hide under. Many times a 3-4 ft. grid over the pen constructed of bailing twine will give excellent protection from flying predators.

To protect the birds from theft, lock your building and pens securely whenever you are not home. Have your neighbors watch for visitors while you are away. Some people actually have burglar alarms in their bird coops. A protective dog kept near your coop usually works well to discourage predators and unwanted visitors.

Build your poultry house to prevent possible injury to your birds. Remove any loose or ragged wire, nails, or other sharp-edged objects from the coop. Eliminate all areas other than perches where the birds could perch more than 4 feet above the floor. Remove perching areas such as window sills, nest box tops, or electric cords whenever possible. These extra measures could eliminate any injury to you or your birds and may prevent damage to the coop, as well.

The plan of a chicken pen and house is provided. Show your work on the back of the page.



1. What is the area of the chicken house? _____ m²
2. What is the area of the chicken pen? _____ m²
3. What is the perimeter of the chicken house? _____ m
4. What is the approximate diameter of the bins? _____ m
5. What is the length of the fence around the chicken pen? Do not include the chicken house wall. _____ m
6. Wire costs \$3.75 per meter. The cost of wire for the fence = \$ _____

7. Posts cost \$12.80 each. If 10 posts are needed, the cost of posts = \$ _____

8. If a gate costs \$45, the cost of materials for the fence = \$ _____

9. Labor is \$27.50 per hour. If 7 hours are needed, the cost of labor = \$ _____

10. The total cost of building the fence = \$ _____

11. If 2 rows of boxes are provided at \$2.65 each, the cost of nest boxes = \$ _____

12. If the cost of 2 roosts is \$5.60, what is the cost of each roost? \$ _____

13. If 24 pullets were bought for \$84, what was the cost of each pullet? \$ _____

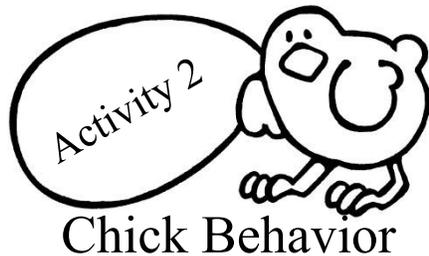
14. The roosts are placed along the 4m wall. How many pullets roost per meter? _____

15. If 6 gallons of fresh water is provided each day. Each pullet drinks about _____ cups.

16. A 50lbs bag of food is bought each week. Each pullet eats about _____ lbs. a day.

17. If the cost of each bag is \$18, each pullet costs about \$ _____ a month to feed.

18. On average 18 eggs are collected a day. If eggs are sold to the canteen for \$3 a dozen, what is the approximate income for the month? \$ _____



Chickens are one of the most studied animal species, and researchers observed chicken behavior extensively. The term behavior can be defined as "the way in which an animal or person acts in response to a particular situation or stimulus." In 1935, research by T. Schjelderup-Ebbe (1894-1976) led to the recognition of a pecking order—a social hierarchy within chicken flocks.

More recent research has primarily focused on the importance of different "normal" behaviors in relation to animal welfare in a commercial operation. Research indicates, for example, that laying performance of chickens is influenced by human interaction. Producers should walk through the laying house a couple of times per day, selecting times that fit into the flock's egg laying cycle, such as in the early morning before the majority of the hens have started laying and later after laying time has ended. Producers should not walk through the house at peak laying time or the hens are likely to lay more eggs on the floor. By walking through the laying house, producers expose the chickens to low levels of stress, which the chickens get habituated to. This process is referred to as socialization.

Chick Behavior

Much early research on chicken behavior focused on determining which behaviors are instinctive and which are learned. In a study, chicks blindfolded from the onset of hatch until one to three days of age instinctively preened themselves and scratched on the ground. In addition, when given a worm, even if alone, these chicks ran around as though there might be others in pursuit of the worm. Research has shown that chicks instinctively show fear of stinging insects but try to catch flies. Some behaviors, however, have to be taught. For example, chicks peck at their own excreta until they learn not to. Chicks must also be taught to drink—when chicks are raised without a hen, producers must dip their beaks in water so that they learn to drink. (When the beak gets wet, the chick's drinking response is initiated.) Researchers have observed that chicks will not peck at a sheet of water, even if they are thirsty and standing in it. They will, however, peck at shiny objects or bubbles in the water.

Hen-Chick Relationship

There is some evidence of prehatching interactions between hens and chicks. Embryos and hens begin to vocalize the day before hatching and do so more and more often as hatching approaches. If an embryo begins to give a distress call, the hen vocalizes or moves on the nest and the embryo becomes silent or begins to emit pleasure calls. The time of hatching may be advanced by having contact with a slightly more advanced clutch of eggs. This acceleration, however, takes place only when chicks are in the latter stages of incubation and pipping.

The main need of newly hatched chicks is warmth. Research has shown that chicks will press against any source of warmth if they are cold; the source need not be a hen. Contact with a human hand as early as 15 minutes after hatching, for example, has been shown to reduce the number of distress calls. The clucking sound of the hen has also been shown to reduce distress calls.

Chicks are able to identify their mother hen by various means, but hearing seems to be an important one. When a sitting hen was removed in the dark from her chicks and another broody hen put in her place, the chicks still found their mother hen. When the hen was disguised by various means, her chicks came to her anyway. Vision does, however, appear to play an important role in helping chicks recognize their mother hen. When chicks from three different breeds of hens were removed and placed in a pen with hens of the same breed, most of the chicks were able to find the correct breed of the mother hen. There were some chicks, however, who made mistakes.

Hens have no favorites when it comes to a brood of chicks. It is simply first come, first served. Vocal communication is important in the hen-chick relationship. If a chick is hidden from its hen, it gives distress calls, and the hen typically goes in the direction of the sound. If, however, the chick is in a glass container—so that the hen can see but not hear the chick—the hen takes no notice of the chick.

For the first 10 to 12 days after hatching, chicks stay close to the hen. After this age, they begin to feed independently of the hen but still sleep and warm themselves under her. This stage lasts from six to eight weeks of age. The time at which a hen disassociates from her brood varies, but it typically occurs before the chicks are 12 to 16 weeks of age.

Chick-to-Chick Behavior

Recently hatched chicks do not typically show any competitive behavior until after three days of age. By 16 days of age, fighting to determine the pecking order begins. Research has shown that with groups composed entirely of female chicks, the pecking order is established by the 10th week. In small groups, the order is typically established earlier, around eight weeks. With groups of males, the social order may remain unresolved for many weeks.

Behavior of Mature Chickens

Individual Recognition

Birds that normally form a social hierarchy, such as chickens, doves, and pigeons, usually attack a new bird of the same species or breed that is introduced into the pen or cages. In order to develop a pecking order, birds must be able to recognize individuals in a flock. This ability allows them to identify and peck only those hens lower in the pecking order. It is not clear what clues chickens are using in order to identify individual chickens within a flock.

Recent research suggests that laying hens are able to recognize around 30 individuals. The social structure developed in small groups begins to break down in flocks of 30 to 60 birds. When there are more than 60 the birds in a flock, the chickens become less aggressive and more tolerant of each other.

Preening

Grooming activity in birds is referred to as preening. Feathers are important for insulation and waterproofing (in addition to flight for those birds that can fly). Feathers are composed of a shaft with several long thin structures called barbs. These barbs are held together by smaller barbules. Sometimes the barbs are pulled apart, which makes the feather ineffective for insulation and waterproofing. A bird runs its feathers through its beak when it preens, which realigns the barbs and makes the feathers better able to perform their functions. Birds also need to keep their feathers oiled to prevent them from becoming brittle and to help with insulation and waterproofing. Birds have a single oil gland near the base of the tail, referred to as the preen gland. Birds pinch this gland with their beaks to extract a waxy oil, which they then apply as they pass their feathers through their beaks. Chickens preen on their own, but they prefer to do it as a group activity.

Fighting

Chicks start fighting when they are only a few weeks old. They are already starting to establish their rank in the flock. This fighting often continues until they reach maturity and the pecking order is well established. Sometimes fights occur among adult birds. This can occur when a member of the flock becomes tired of its position in the social hierarchy and decides to challenge a higher-ranking bird. More commonly, however, fights occur when a new bird is introduced into the flock and has to find its place in the pecking order or when a bird is reintroduced to the flock after a long absence.

When the fight begins, the birds will raise their neck feathers and point their wings toward the ground, spreading them apart from the body. They will then stand as tall as they can and try to face each other down. If neither bird backs down, they will start pecking, scratching, and jumping at each other. They will also beat at each other with their wings.

Nesting

Domestic hens prefer to lay in nests containing loose material that they can settle into, molding the material with their bodies and feet, and that they can manipulate with their beaks. When given a choice, the former condition is more important than the latter. It is important for pullets to have access to nesting boxes before they start to lay. If a hen will have jump up to nest, she must be trained to do so as a pullet. If she does not learn in the laying house, she could end up laying a greater number eggs on the floor. Birds are mimics, and the first layers become the teachers for the remaining pullets in a flock.

The prelaying behavior of domestic chickens is similar for most hens. Before laying, a hen shows restlessness and begins to look for a nest, poking her head into the nest boxes provided. Between nest examinations, she typically resumes other behavior she had been performing—eating, preening, sleeping, and so on. Over time, the hen puts more and more of her body into the nest boxes she is examining, eventually entering one and settling down. Hens may stay in the nest after the egg is laid. They may later cackle and leave the nest. Different breeds may exhibit some aspects of prelaying behavior more than others. Leg-horn hens, for example, typically show pronounced searching and nest-selection behavior. As a result, these hens spend more time visiting and investigating a number of potential nest sites before choosing one. In contrast, hybrid layers of brown-shelled eggs tend to sit longer in nests and perform nest building activities.

Prelaying behavior is triggered by hormones associated with the last ovulation and not by the presence of an egg in the shell gland. Normally, the prelaying behavior begins an hour or two before the egg is ready to be laid. If egg laying is delayed for some reason, the period for prelaying behavior will pass, and the hen will no longer be motivated to search for a nest. In these cases, the egg may be laid outside the nest while the hen goes about other activities.

Dust Bathing

Dust bathing is the act of rolling or moving around in dirt to cleanse the skin and feathers of parasites, dead skin, and other skin irritants. It also helps prevent the buildup of the oil from preening. When chickens do not have access to dust baths, they will nonetheless go through the motions of dust bathing. In behavioral studies, hens have shown a willingness to work to gain access to material for dust bathing. (Note that access to a dust bath does not prevent feather pecking.)

Perching

Chickens have a desire to roost. At about three weeks of age, chicks start to jump up to higher surfaces. The structure of a chicken's claws ensures a firm grip while the chicken is perching and will prevent the chicken from falling off a tree branch, even when the bird is asleep. Chickens go to perches about half an hour before twilight, with the actual time depending on light intensity. For example, they will perch earlier than expected on a dull, cloudy day and later than expected on a bright, clear day. They seem to perch when the light is about 1.25 foot-candles. The "flying down" time in the morning is typically 30 minutes before dawn, at around 0.003 foot-candles of light. Again, the actual timing of this activity varies depending on the weather conditions. Chickens snuggle together during the night and start spreading out about two hours before the lights come on.

Responding to High Ambient Temperatures

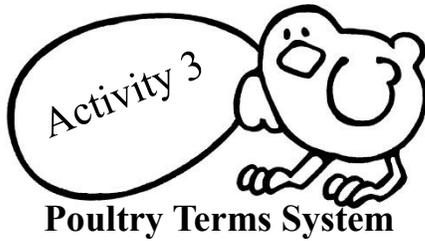
Chickens can tolerate cold weather better than hot. Chickens cannot sweat—they cool themselves by dunking their beaks in cold water or flapping their wings to air out their feathers. They may also pant when they are desperate to cool down.

Drinking

Chickens must have access to a supply of clean, fresh water. Water in the crop softens feed so that digestion can occur. Without water, dry feed forms clumps in the crop. The clumped feed can press on the bird's carotid artery, decreasing blood flow to the brain. This can cause paralysis and possible death. Poultry have a split in the upper hard palate of the beak that allows air into the nasal passages. This prevents a vacuum from forming in chickens' mouths. As a result, chickens rely on gravity to draw water into the crop. This is why chickens lift their heads after dipping their beaks in water.

Share

1. At what age do chickens start fighting?
2. Why do birds dust bath?
3. Who was the first to the recognition of a pecking order?
4. How long do hens start to nest before they start to lay an egg?
5. What type of birds likes to sit in the nest after they lay the egg?
6. At what age do birds begin to perch?
7. What is preening?
8. Why do birds need water?



Knowing the correct poultry terms is very important when involved in poultry projects. The American Standard of Perfection lists the terms used to describe the external (or outside) physical characteristics of poultry. Knowing these terms is essential to the identification and judging of exhibition and production types of poultry, selection and preparing birds for show, giving demonstrations, understanding how judges judge poultry, and just talking about poultry with friends.

CHICKEN TERMS

Approximately 30 terms are used to describe the different external parts of a chicken. The beak on a chicken is pointed because the chicken is a grain eater. The comb is used to identify breeds and varieties. Common comb types are single, rose and pea. The earlobes are patches of smooth skin located below the ears of the bird. Earlobe color is either white or red and is used for breed identification. The wattles are fleshy appendages attached to the lower edge of the head. The feathers on the neck of the chicken are hackles on the male and neck feathers on the female. The main tail feathers arise from the tail head of both male and female chickens. The sickle feathers are the long flowing feathers on the male birds. The saddle feathers are those that flow from the back down each side of the bird. The hock is the joint between the drumstick and the leg or shank. The spur is a bony projection arising from the inside of the bird's legs. The spur is prominent in the male and is used for fighting.

TURKEY TERMS

The snood of the turkey is similar to the comb of a chicken. It is larger in the tom than hen. It becomes enlarged during the mating ritual by the tom. Sometimes, it becomes injured when toms fight, which allows disease organisms to enter the bird's body. The caruncle is reddish, fleshy material on the naked portions of the head, face, and neck of the turkey and Muscovy duck. It is similar to the wattles on the chicken. The beard is a small tuft of long, coarse, black hairs projecting from the upper part of the breast of a tom turkey.

DUCK TERMS

The bill is the horny formation projecting from the head of waterfowl. It consists of the upper and lower mandibles which form the forward mouth parts. The bean is a raised, hard, bean-shaped projection on the tip of the bill of waterfowl. Sometimes, the bean is removed from ducks to prevent them from seriously harming or killing each other.

GOOSE TERMS

The head of a goose is different from the head of a duck because of the presence of a dewlap. This is a loose fold of skin under the rear of the bill that extends along the throat area. Its absence constitutes a disqualification in some breeds of geese such as the African and Toulouse.

GENERAL TERMS

Proper terms for common species of domesticated poultry.

Species	Young of either sex	Mature Male	Mature Female
Chicken	Chick	Cockerel* Cock	Pullet* Hen
Duck	Duckling	Drake	Duck
Goose	Gosling	Gander	Goose
Guinea	Keet	Cock	Hen
Peafowl	Chick	Peacock	Peahen
Turkey	Poult	Tom	Hen

* Terms for male and female chickens, respectively, that are less than 1 year of age.

Write the correct term next to the definition

Class	Breed	Variety	Sex	Hock	Shank
Dewlap	Capon	Keet	Poult	Tom	Hen
Gosling	Gander	Goose	Duckling	Duck	Drake
Trio	Bean	Broiler/Fryer	Baby Chick	Caruncle	Roaster
Fowl	Snood	Cock			

Answer	Definition
	Joint between the thigh and shank.
	A young goose.
	One male and two females of the same variety.
	R. The comb of a turkey.
	A male duck.
	Either male or female.
	A collective term applied to domestic chickens, ducks, geese and turkeys.
	A chick just hatched (usually 1 to 7 days old).
	Recognized group of poultry which bred together and produce the same offspring.
	A female bird older than one year.
	This refers to the bird originated.
	The portion of the fowls leg below the hock.
	A castrated male chicken.
	A young turkey.
	A female duck.
	A young chicken of either sex weighing 2-6 pounds.
	The reddish fleshy material on the head, face and neck of a turkey and Muscovy duck.
	A mature male chicken.
	A young duck.
	An unsexed baby guinea.
	A male turkey.
	Feather pattern, feather color and comb determine the variety of a bird within a breed.
	The loose fold of skin under the goose bill.
	A male goose.
	A raised, hard, bean shape on the tip of the bill of ducks.
	A young chick of either sex weighing 6 to 16 pounds.
	A female goose.

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					
Clean Legged Bantams					
Feather Legged 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 4honline enrollment by January 15, 2025

____ Completed Fair Entry on line by June 4, 2025

____ Copy of YQCA Certificate attached