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Basic Care Guide for Poultry

Caring for an animal of any kind is a big responsibility. This brochure is to help you with the basic needs of the animal. If you have any questions, ask your club leader or someone with animals for assistance. You should receive only one copy of this brochure in your 4-H career.

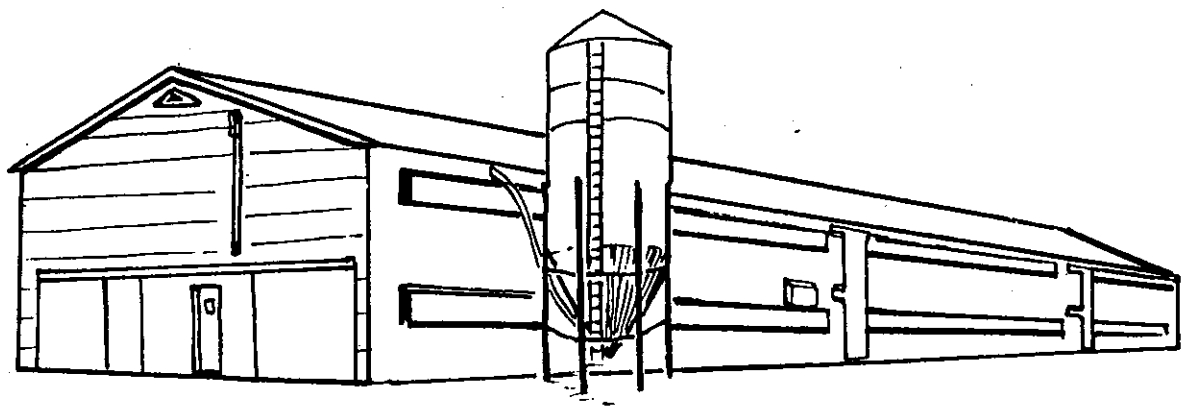
You may be raising birds for meat, or for eggs, or for showing. Depending on their purpose the birds will require different kinds of care.

HOUSING

Modern poultry barns are long and narrow and have no windows, so **electricity** is needed for lights and to run fans. The walls and the ceiling are insulated to make them energy-efficient and to **control the growing environment** for the birds.

Good ventilation is very important in a closed poultry building. Ventilation fans must get rid of harmful gases and moist air, and keep the temperature at the proper level. Stale air must be replaced with fresh air, without causing a draft on the birds.

Good housing **protects the birds** from animals like rats, mice, and foxes. The poultry house should also be as bird-proof as possible, so that wild birds (pigeons, sparrows) can't get in and bring disease to the poultry.

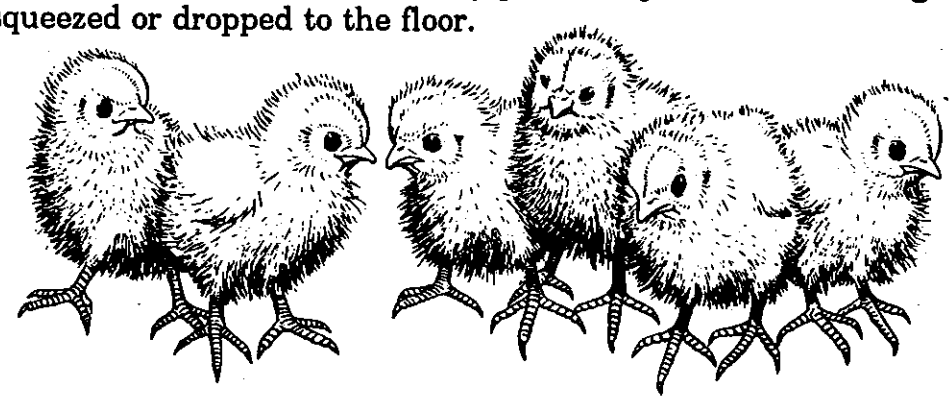


Male and female birds are usually raised separately, even if they are to be used for breeding. Male birds grow faster than females and will be marketed earlier. Each sex of bird will have a special diet and it is easier to feed and market the meat birds if they have been separated into male and female groups.

Male and female turkeys may be housed together, up to 6 weeks of age. After 6 weeks of age, turkeys go through a stage called "shooting the red", when the head parts become a bright red colour. The birds are considered mature at this time and should be separated to prevent breeding.

PREPARE FOR YOUR BIRDS

When you get your birds, they will probably be little yellow balls of fluff and about 1 day old. Young turkeys are called **poults** and are cared for in much the same way as chicks. Chicken poults will likely be picked up from the supplier in boxes. Boxes of live chicks must be handled carefully. Never remove chicks by dumping the box. Tilt the box slightly and gently push/scoop them out. Young birds should not be squeezed or dropped to the floor.



Before you bring your birds to their new home, **clean and disinfect** all equipment and floors to get rid of disease-causing organisms. **Fill colour and feeders.** Make sure that they are at the right temperature, and at the correct level. **Water should be room temperature for day olds, so fill the colour early.**

BROODING

Brooding is the **period spent in the nursery** for the chicks and poults. They are usually raised on the floor of the poultry barn for this first part of their life. **Temperature and light are very important** when brooding chicks and poults.

Temperatures for Brooding (measured at bird level)		
Time	Chicks	Poults
1 to 6 days old.....	28°C-32°C	32°C-35°C
1 to 6 weeks.....	decrease temperature 2-3°C each week	decrease temperature 2-3°C each week
6 weeks.....	21°C	21°C
after 6 weeks.....	10°C-27°C	10°C-27°C

These temperatures are only guidelines. **Watch the birds carefully to make sure they are not too warm or too cold.** The birds will move as far away from the heat lamp as they can if they are too hot; if they are too cold, they will huddle together under the heat lamp to keep warm.

Light is important to encourage the chicks and poults to start eating normally. 20 **lux** (a unit of how bright the light is) is the minimum required for broilers and layers; 50 lux is the recommended minimum for turkeys. Light is also used to encourage layers to start laying eggs. In this case, it is the length of time that the lights are on that is important for egg production, and not the brightness.

LAYING BIRDS

Around **16-18 weeks of age, laying birds will be moved to laying wire cages.** The cage should allow a standing chicken to move its head easily, anywhere in the cage. Birds are usually housed with 2 birds/cage and sometimes more, depending on the cage size. The cage keeps the birds separate from their droppings. This helps to keep your birds healthy and disease-free.

BROILERS

Broilers will continue to be raised on the floor of the poultry barn until they are ready for market. The floor is usually concrete, and **litter** is placed on the floor. Litter may be wood chips, rice or peanut hulls, soft straw, or any other clean, absorbent material that the birds will not eat.

Check regularly to make sure that the litter is not too wet or too dry. Wet litter mixed with feces is a good place for bacteria to grow. Remove the litter that is too wet and replace it with clean litter. Litter that is too dry will cause dust which may lead to health problems in the birds. Check the humidity of the pen. A light misting of water may help.

SPACE REQUIREMENTS

Some general space requirements are given in the following tables. For heavy turkey hens, you need at least 0.3 m^2/bird and for heavy tom turkeys, 0.4 m^2 is the minimum recommended area.

Space Requirements for Light Breeds (White Leghorn type)

Age of bird	Floor space per bird	Feed trough space	Water trough space
0-6 weeks (500 g)	0.05 m^2	2.5 cm	1.0 cm
6-20 weeks (1400 g)	0.14 m^2	7.5 cm	2.0 cm
mature (1800 g)	0.2 m^2	10.0 cm	4.0 cm

Note: For heavier egg-type chickens, such as the brown-egg varieties, add another 20% to these recommended measurements.

Space Requirements for Broiler Breeders

Age of bird	Weight of bird	Floor space needed when birds raised on litter
0-6 weeks	750 g	0.047 m^2
6-14 weeks	1600 g	0.116 m^2
14-20 weeks	2300 g	0.149 m^2
mature	3600 g or larger	0.186 m^2

Space Requirements for Chickens Housed in Cages

Age of bird	Maximum weight of bird	Area of cage floor needed per bird	Length of feed trough needed/bird	Number of colour needed/bird
0-8 weeks	650 g	220 cm^2	2.5 cm	15
8-16 weeks	1200 g	260 cm^2	5 cm	10
16-20 weeks	1450 g	300 cm^2	8 cm	6
20-adult	1800 g	410 cm^2	10 cm	4
20-adult	2200 g	450 cm^2	10 cm	4

Source of tables: Recommended code of practice for the care and handling of poultry from hatchery to processing plant. Agriculture Canada, Publication 1757/E.

FEEDING

It is important that you **provide a balanced diet** for your birds, to keep them productive and healthy.

The feed depends on:

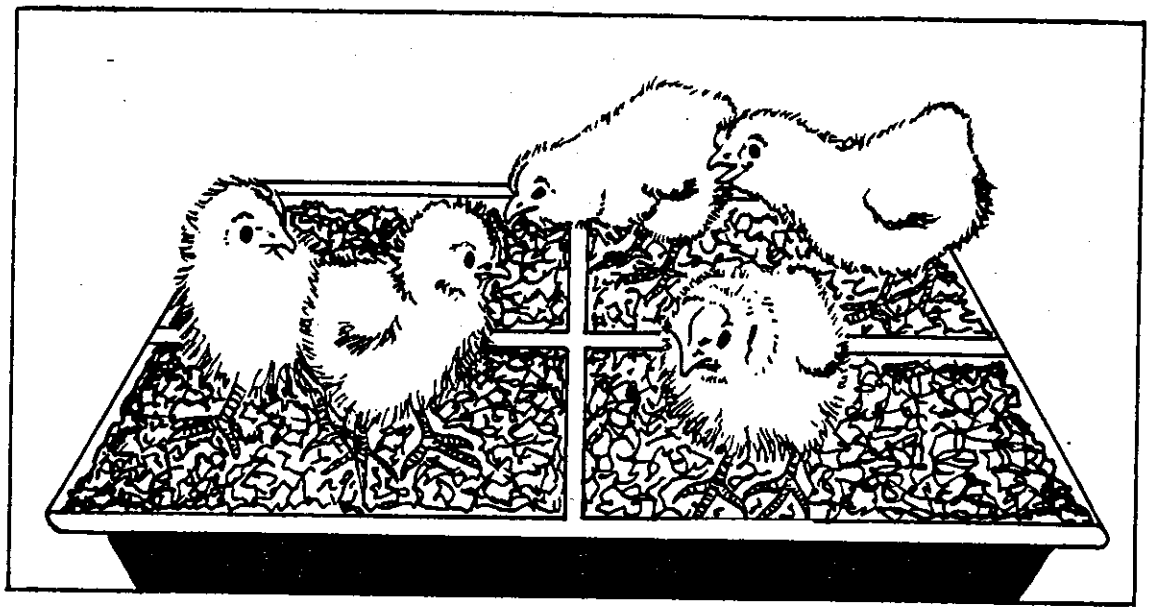
1. The type of bird (chicken, turkey, pheasant)
2. How old it is (chick, young grower, adult)
3. Stage of productivity (if she is laying eggs)
4. Temperature of the poultry house.

There are also different forms of feed, such as crumbles, pellets, and mash. Some common ingredients in poultry feeds are corn, soybeans, and various grains, vitamins, and minerals. Birds must be fed everyday, and they must have access to fresh water all the time.

Feeds change with the age and energy needs of the bird. A **starter** ration is fed from day 1 to 3 weeks and is the highest in energy and protein of all rations. This is followed by a **grower** ration from 3 to 5 weeks and finally by a **finisher** ration. Laying birds do not usually have a finisher ration as they need a certain amount of energy to keep laying eggs and a higher level of calcium for egg shell formation.

BROILERS

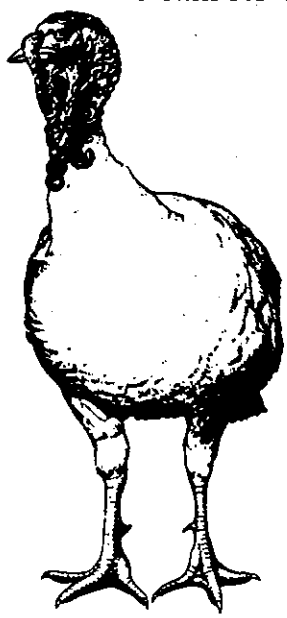
Broiler chicks are usually fed with a pan-type automatic feeder, and have additional feed scattered on cardboard containers i.e. an open egg carton or flat. This scattered feed is used during the first few days to make sure the chicks find food and do not starve. Broilers are allowed to eat as much as they want — this is known as **free choice** or ad libitum feeding.



Broilers need a certain amount of protein in their diet, so they can put on weight and produce meat. As the birds mature, you reduce the amount of protein and energy in the diet to keep them from becoming too fat.

LAYERS

Layers are also fed **free choice,** except if they are given extra grain, and that amount is usually controlled. Mash is the form preferred for birds housed in cages. An automatic trough feeder is commonly used. Younger birds will be fed much the same as broilers. Adult birds, when producing eggs, need about 18% protein, and extra calcium for eggshell production.



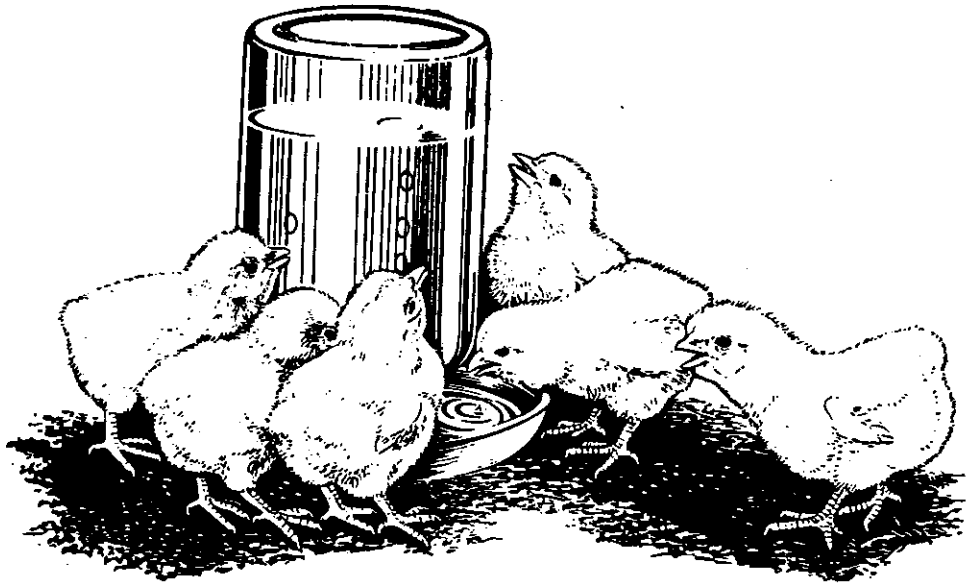
TURKEYS

Feeding turkeys is more complex, as their **diets are changed more often.** In general, turkeys are fed much the same as broiler chickens, as they are both meat-type birds.

WATER

Water is an **essential** part of any bird's diet. There are a variety of colour available, including hanging bell, pan-type, cup, nipple, and trough colour. Colour

should be automatic, easy to clean, free from excessive splashing, and flood-proof. **Adjust the height** of the colour as the birds grow. Have enough colour so that there isn't crowding around any one waterer.



HEALTH

Healthy birds produce more eggs and put on more weight than less healthy birds. **Preventative health measures start from day one.** Most chicks and poults are vaccinated at the hatchery for some of the more common poultry diseases.

Another health concern is **internal and external parasites,** as they rob energy from the bird and slow its growth. **Coccidiosis** is a major internal parasite and can be prevented by adding a drug (called a **coccidiostat**) to the feed. A bird with coccidiosis may have bloody diarrhea and will probably lose its appetite. **Lice, mites and ticks** are common external parasites and can be treated by carefully spraying or dusting the birds with an approved insecticide.

To see if your birds are healthy, watch to see how much feed and water they eat and drink. Your birds may be sick if they suddenly stop eating or drinking. **Call a veterinarian** if they do not eat or drink for any extended period of time.

To keep birds healthy, you should:

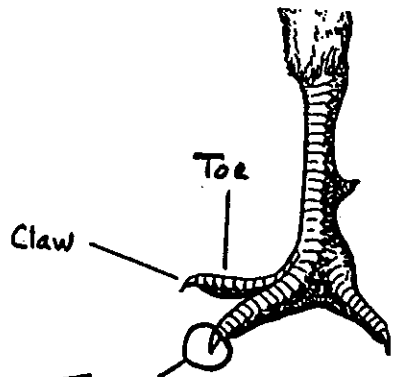
1. Remove and dispose of dead birds immediately
2. Treat sick birds promptly
3. Keep feeders and colour and other equipment clean and sanitary
4. Clean and disinfect the poultry house and equipment after each group of birds is marketed.

GENERAL CARE

A common problem in chicken flocks is **feather pecking**. Birds may peck at each other, as if they are grooming each other, but will actually tear out feathers and

may even cause the skin to bleed. There is also the chance that the birds may hurt each other. **Pecking is a symptom of stress.** To avoid this make sure lights are not too bright, birds are not crowded, and they have enough feed. You may have to trim beaks if the problem persists.

In addition to beak trimming, turkeys may also be **detoed**, to prevent them from scratching each other. When a bird is detoed, only the claw is removed and the rest of the foot is left alone, so that the birds can walk properly. **Dubbing** is another procedure that is done at an early age, and involves removing the comb. This is used for birds housed in cages, so that they do not injure their comb on the wire of the cage.



The claw is removed to detoe a bird.

Do not be alarmed if you find that your birds are suddenly losing a lot of feathers. This is a natural process and is called **molting**. Each year, the birds lose their old feathers and grow new feathers. They also stop laying eggs during a molt.

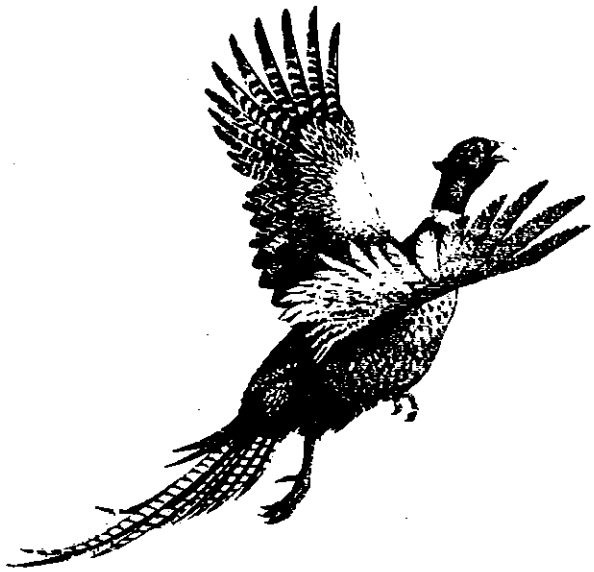
Do not startle your birds or get them too excited, as this upsets them. Let them know you are coming, for example, by knocking on the door of the poultry house before entering. Try to wear similar coloured clothing whenever you are around the birds. Move slowly and quietly.

It is important to house your birds away from other livestock on the farm (i.e. cows, pigs) so there is less chance that disease will travel from one type of animal to another.

HANDLING OF ADULT BIRDS

Handling can be stressful to birds if not done properly. They should be comfortable when being held. Avoid carrying the birds upside down. They should be carried by both legs or both wings. Caged birds should be inserted through the cage door head first and should be removed from the cage, feet first, by both legs. They should never be handled by the head, neck or one wing alone.

GAME BIRDS



This group includes such birds as quail, guinea fowl, partridge, and pheasant. These birds are fed and housed in much the same way as turkeys, and grow more slowly in comparison to broiler chickens. See the following table for some sample requirements for quail.

These birds tend to be more aggressive than chickens or turkeys. Keep their beaks trimmed, to prevent injury.

Also, these birds learn to fly at an early age and may escape from their pens. Keep them confined close to the heat source, feed, and water.

Space Requirements for Quail

Age of bird	Floor space	Feeder space	Waterer space
1-10 days	9 birds/ft^2	½-in./bird	Three 1-gal fountains/ 100 birds
10 days-6 weeks	6 birds/ft^2	1 in./bird	1 linear ft/ 100 birds
6 weeks-maturity	3 birds/ft^2	1½-in./bird	1 linear ft/ 100 birds

Source: NCSU - Poultry Extension

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POULTRY - BREEDING AND MARKETING
DIGGING DEEPER

Optional Information For Senior Members

Poultry Breeds

INCREASING PRODUCTION EFFICIENCY

Over the past 45 years there has been a steady increase in the efficiency of production in poultry and eggs. For example, in 1951 it took 6 kg of feed to produce 1 kg of meat on a chicken broiler. In 1991 it took 1.85 kg of feed to produce the same amount of meat.

In 1951, it took 3.4 kg to produce a dozen eggs. By 1991, producers were able to reduce this by almost one-half. It now takes 1.6kg of feed to produce a dozen eggs. Egg production has increased dramatically during this period, too. In 1951 the average egg production per hen was 160 eggs. Today a producer can expect most of his/her hens to average approximately 290 eggs.

This increase in efficiency has been due in part to better feed, breeding and care as well as more intensive management practices. The increases are also a result of a lot of applied research.

COMPARISON AS TO EFFICIENCY OF PRODUCTION 1951 - 1991

Product	Year	Kgs of feed to produce 1 kg of meat	Kgs of feed to produce 1 dozen eggs
Chicken broiler	1951 1991	6.0 1.85	NA
Chicken layer	1951 1991	NA	3.4 1.6

BLEACHING

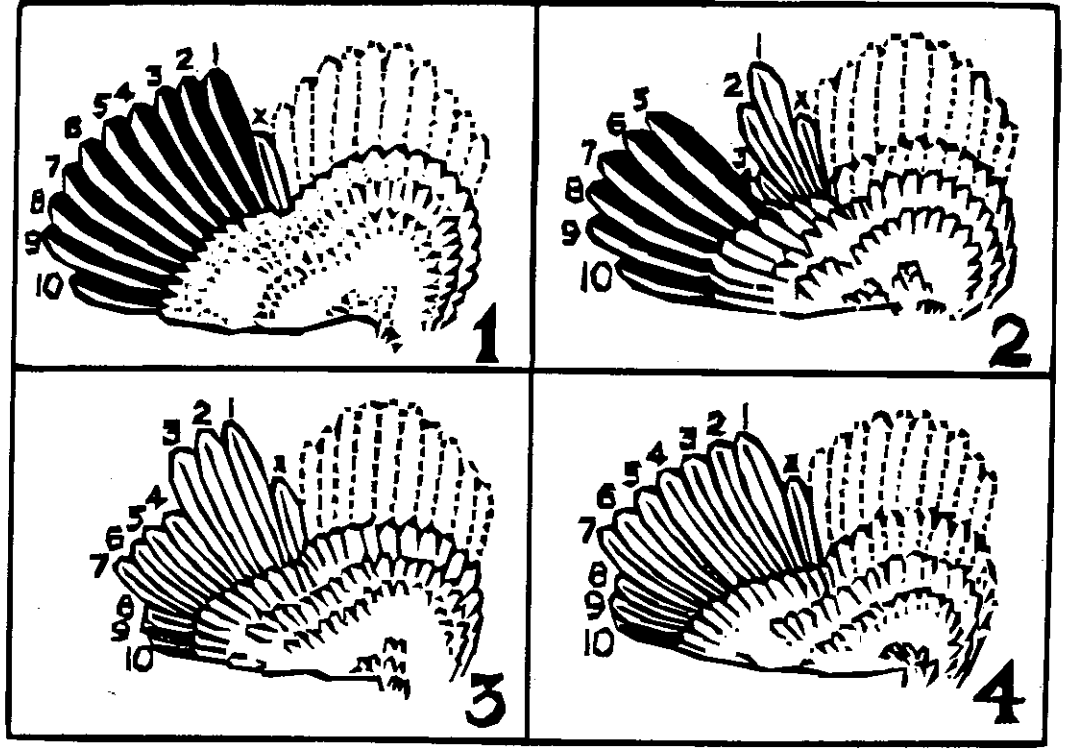
When you handle a yellow-skinned layer you will also be able to tell approximately how many eggs she has laid by the colour of her skin. This is because the bird's skin gradually loses its yellow colour as it lays more eggs. This is called bleaching. A bird's skin bleaches in an orderly manner, the colour leaving the body in a set way and returning to it in the same manner when the bird stops laying. It takes about the same time for the yellow pigment to return to each part of the body as it did to leave.

The bleaching begins at the beak. Here is a chart that shows how the skin bleaches and approximately how many eggs a bird lays during that time.

Bleaching order of body part	Number of weeks to bleach each part	Number of eggs to bleach each part
Vent and base of beak	0-2	5-10
Half of beak	3-5	20-25
Entire beak	6-8	30-35
Bottom of feet	10-14	60-75
Shanks partially	16-20	90-100
Shanks completely	24-28	130-150
Hock joints and top of toes	32-36	170-180

When the bleaching has stopped, the chicken begins to molt. This means that she sheds her feathers and begins to grow new ones. This usually takes between 7 and 10 weeks, and it is a time for the chicken to rest. She usually stops laying when she is molting.

Poultry molts every year. Good producing hens will lay for 12 to 15 months before they stop and go into a molt. Poor producers will usually go into a molt after a short laying period and will shed their feathers slowly, sometimes taking up to 24 weeks to grow a new set of feathers.



Wings during different stages of molt. Top left (1) shows the 10 old primary feathers (black), and the secondary feathers (broken outline), separated by the axial feather (x). Top right (2) shows a slow molter at six weeks of molt, with one fully-grown primary and feathers 2, 3, and 4 developing at two-week intervals. In contrast, 3 (lower left), a fast molter, has all new feathers. Feathers 1 to 3 were dropped first (now fully developed); feathers 4 to 7 were dropped next (now four weeks old); and feathers 8 to 10 were dropped last (now two weeks old). Two weeks later (4, lower right), feathers 1 to 7 are fully-grown. Fast molt took 10 weeks, compared to 24 weeks for slow molt (South Dakota Extension drawing).

PARASITE PROBLEMS

Here are some fairly common infestation problems that may affect your hen house.

Northern fowl mites - are tiny insects about the size and colour of grains of pepper. They can be found under the feathers below the vent of the bird.

Red mites - are very small red or grey insects that feed on the birds' blood at night and can be found in the cracks and crevices of the roosting areas during the day.

Lice - are about 3 mm long and are the same colour as the hen's skin. They are also found under the feathers below the vent.

Treating the birds, after consultation with your local veterinarian, can control both mites and lice.

Roundworms - are white worms, about 5 to 10 cm long. If you see these worms in fresh droppings, then your birds should be dewormed. Use a commercial dewormer according to the manufacturer's directions.

Incubation and Brooding

INCUBATION TROUBLE SHOOTING CHART FOR CHICKEN EGGS

Symptoms of trouble	Probable cause	Suggested remedies
EGGS CLEAR No blood ring or embryo growth (Infertile and early dead germs)	1. Improper mating 2. Eggs too old	1. 6-10 vigorous males/100 hens 2. Eggs set within 10 days after laid 3. Keep hens in good flesh or condition.
EGGS CANDLING CLEAR But showing blood or very small embryo on breaking	1. Incubator temperature too high 2. Badly chilled eggs 3. Low vitamin ration	1. Watch incubator temperature 2. Protect eggs against freezing temperatures 3. Feed breeder or laying ration
DEAD GERMS Embryos dying at 12-18 days (Late dead germs)	1. Improper turning 2. Lack of ventilation 3. Faulty rations	1. Plenty of fresh air incubator room and good ventilation of machines 2. Feed breeder or laying ration
CHICK FULLY FORMED But dead without pipping (breaking through the shell)	1. Improper turning 2. Heredity 3. Wrong temperature	1. Turn eggs at least 4 times daily 2. Select for high hatchability 3. Watch incubator temperature
EGGS PIPPED (cracked) But chicks dead in shell	1. Low average humidity 2. Low average temperature 3. Excessive high temp. for short period	1. Raise humidity levels 2. Maintain proper temperature throughout hatch 3. Guard against temperature surge
STICKY CHICKS Shell sticking to chick	1. Eggs dried down too much 2. Low humidity at hatching time	1. Check and raise humidity levels at 30 C up to 3 days prior to hatching 2. Increase humidity levels when eggs start to hatch
STICKY CHICKS Chicks smeared with egg content	1. Low average temp. 2. Small air cell due to too high average humidity	1. Proper operating temperature 2. Increase ventilation and lower humidity

CHICKS TOO SMALL	1. Small eggs 2. Low humidity 3. High temperature	1. Don't set eggs less than 54 grams 2. Maintain proper humidity 3. Watch incubator temperature
LARGE SOFT BODIED CHICKS	1. Low average temp. 2. Poor ventilation	1. Proper temperature 2. Adequate ventilation
HATCHING TOO EARLY With bloody navels	1. Temperature too high	1. Proper control of temperature

TROUBLE SHOOTING BROODING PROBLEMS

The poultry producer should watch for the following when trouble shooting in the brooder pen:

Condition	Problem	Remedy
Young birds spread uniformly over the floor area and are at the feeders and waterers.	None.	O.K.
Crowded along perimeter of the chick guard or along the wall.	Too hot.	Lower temperature.
Panting and gasping.	Respiratory disease or too hot.	Lower temperature if too hot, otherwise have a veterinarian examine a few of the unthrifty birds.
Huddled to one side of heat source.	Too drafty.	Eliminate draft conditions.
Huddled under heat source.	Too cold.	Raise temperature.
Huddling and piling in small groups or in corners.	Too cold or too drafty.	Raise temperature or eliminate draft conditions.
Small, scrawny birds and some dead after two days of brooding.	Possibly dehydrated from not finding water and dying of thirst or starvation from not finding feed.	Check that all young birds are in close proximity of water and feed. Ensure that lighting is adequate.
Vent pasting, (fecal material sticking to the vent).	Could be too hot, too cold, or feed causing laxative condition.	Raise or lower pen temperature. Sprinkle some finely cracked wheat or corn on top of feed if laxative condition.

Crowded after six weeks of age.	Not enough space causing unevenness in size of birds.	Provide more space.
Crowded feeders and waterers.	Not enough feeding and watering space causing some birds to become thin.	Provide more feeders and waterers.
Wet litter.	Too many birds for space provided.	Provide adequate space. Also provide good ventilation. If litter very wet, replace with new litter material.
Strong ammonia odours.	Poor air movement. Too many birds for space provided.	Provide good ventilation.
Feather picking or cannibalism. (Cannibalism is the habit of one bird pecking at another)	Causes unthrifty birds, injuries and mortality.	Provide plenty of space. Good ventilation. Reduce light intensity in pen. If all else fails, trim beaks with an electric beak trimmer.
Poor feathering and lacking uniformity at 5-6 weeks.	Poor watering or feeding system or not enough pen space.	Provide good quality feed and water and increase space per bird.

Making The Grade

GRADE REQUIREMENTS FOR CHICKENS

Canada A

Not deformed except for a slightly crooked keelbone that does not interfere with normal placement of meat.

Moderately plump breast on both sides of keelbone at anterior end, with a moderate tapering of flesh towards posterior end and keelbone at anterior end does not project more than 3.2 mm beyond flesh.

Has definite deposit of fat at the base of neck with fat continuing up the side of wishbone, and there is evidence of fat over breast and thighs.

Canada B

Not deformed except for a slightly crooked keelbone that may interfere with normal placement of meat.

Has sufficient fullness of flesh on both sides of keelbone to prevent a sharp falling of flesh from anterior to posterior end and keel does not project more than 3.2 mm beyond the flesh.

Has sufficient fat to prevent the flesh from appearing prominently through the skin.

Canada Utility — Has the flesh and fat requirements for at least Canada B and more than Canada C but may be missing:

a) the wings
b) one leg including the thigh or both drumsticks
c) the tail
d) small areas of flesh from carcass
e) a piece of skin not exceeding an area equivalent to 2 of area of breast

Canada C — Has sufficient fullness of flesh on both sides of keelbone to prevent sharp falling away of flesh from anterior to posterior and keelbone does not project more than 4.8 mm beyond flesh.

Canada Canner — Meets requirements of other grades except that the bird may be missing:

a) both legs including thighs
b) area of skin exceeding 2 area of breast
c) an amount of flesh not exceeding 2 area of flesh of breast

*Only the major requirements are listed above. There are additional requirements for each grade.

GRADE REQUIREMENTS FOR EGGS

1. (1) An egg may be graded as Canada A1 if, in addition to meeting the requirements set out in section 5 of the Regulations of the Canada Agricultural Products Standards Act,

a) the egg shows on candling
   i) a firm albumen,
   ii) a yolk shadow that is slightly distinct,
   iii) a round yolk that is reasonably well centred, and
   iv) an air cell that is not in excess of 0.3 cm in depth; and
b) the shell is
   i) clean,
   ii) normal in shape and free from rough areas or ridges, and
   iii) uncracked.

(2) An egg may be graded as Canada A if, in addition to meeting the requirements set out in section 5 of these Regulations,

a) the egg shows on candling
   i) a reasonably firm albumen,
   ii) an indistinct yolk outline,
   iii) a round yolk that is reasonably well centred, and
   iv) an air cell that is not in excess of 0.47 cm in depth; and
b) the shell
   i) has not more than three stain spots if each spot does not exceed an area equivalent to 0.3 cm by 0.15 cm and the shell is otherwise clean,
   ii) is normal or nearly normal in shape but may have rough areas and ridges other than heavy ridges, and
   iii) is not cracked.

(3) An egg may be graded as Canada B if, in addition to meeting the requirements set out in section 5 of these Regulations,

a) the egg
   i) weighs at least 66.3 g
   ii) does not meet the requirements for the Grade Canada A1 or Canada A, and
   iii) is not cracked; and

b) the egg
   i) shows on candling a distinct yoke outline,
   ii) shows on candling a yoke that is moderately oblong in shape and that floats freely within the egg when twirled,
   iii) shows on candling a very slight degree of germ development,
   iv) shows on candling an air cell not in excess of 0.9 cm in depth,
   v) shows spots of dirt on the shell, if the aggregate area of dirt does not exceed 0.15 cm^2, and stain spots, if the aggregate area of the stain does not exceed 1.25 cm^2, or
   vi) has a shell that is slight abnormal in shape and has rough areas and definite ridges.

(4) An egg may be graded as Canada C if, in addition to meeting the requirements set out in section 5 of these Regulations,

a) the egg is free from dirt; and

b) the egg
   i) shows on candling a prominent yoke outline,
   ii) shows on candling a yolk that is definitely oblong in shape but does not adhere to the shell membrane,
   iii) shows on candling meat spots or blood spots not in excess of 0.3 cm in diameter,
   iv) shows stain spots on the shell, the aggregate area of which does not exceed 1/3 of the shell surface of the egg, or
   v) has a shell that is cracked, if the internal contents are not leaking.

To Market, To Market

In advertising, image is everything. Chicken and turkey producers especially, have benefited from the public's perception that poultry products are much lower in fat and other bad things, and much higher in protein and other good things, than red meats. Pork and beef producers spend a lot of money trying to change this perception. Here's your chance to show them they're right - or wrong!

Today you are to debate the statement: "Chicken is the best meat you can eat." Give it your best shot!

POULTRY

Breeding and Marketing

A Guide for Leaders and Youth Leaders

Ontario 4-H Council

Ontario Ministry of
Agriculture, Food and Rural Affairs

4-H 1900 00 LE

The Ontario 4-H Program provides opportunities
for the personal development of youth.

THE 4-H PLEDGE

"I pledge:
My Head to clearer thinking
My Heart to greater loyalty
My Hands to larger service
My Health to better living
For my club, my community and my country."

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Vivian Webb, Guelph and updated in 1999 for the Ontario 4-H Council.
Special Thanks to the original advisory committee:
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and OMAFRA staff.

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BE A "GREEN" 4-H CLUB

The 4-H program uses a lot of paper. Please help us to reduce our costs, and save a few trees, by remembering these tips.

- Only 4-H members (10-21) and leaders should receive 4-H resources.
- If your club plans to do this project again, keep the resource materials so you don't need to reorder.

If your club has extra resources, please return them promptly to the Ontario Ministry of Agriculture and Food office so that someone else can use them.

WELCOME TO 4-H

It has often been said that, "Volunteer 4-H club leaders are a blend of friend, teacher and parent." That's a pretty big order to fill! But you will discover that you have many talents as a 4-H volunteer. Having an interest in young people and their development and being willing to take up the challenge of 4-H leadership is the first step to success.

This project focuses on the breeding and marketing of poultry. However, the development of members as individuals is your real goal. You will get to know the club members and where their interests lie very well. Use this knowledge, as well as your own expertise and imagination to plan a fun, interesting and challenging club program for your members. Enjoy being a 4-H club leader!

WHAT ARE MY RESPONSIBILITIES?

Before your project begins:

1. Familiarize yourself with current provincial and local 4-H policies.
2. Attend a leader training session (if scheduled);
3. Advertise the project and organize a club with a minimum of six eligible members and one volunteer leader per club except in cases deemed to be unique and approved by the local 4-H Association; and
4. Review available resources and begin planning the club program.

During the project:

1. Attend each meeting and the Achievement Program;
2. Assist members in planning and presenting the club program;
3. Provide a FUN, learning atmosphere;
4. Ensure the club membership list is completed and forwarded to the Ontario Ministry of Agriculture, Food and Rural Affairs before the second meeting;
5. Order awards and project and name plates once membership list is completed;
6. Help each member to set and reach goals for personal development;
7. Encourage members to work together as a group;
8. Provide guidance in choosing and completing an Achievement Program; and
9. Evaluate the club program. Share the evaluation with the 4-H Association and the Ontario 4-H Council.

4-H CLUB PROGRAM PLANNING

A successful 4-H club doesn't just happen! Careful planning is necessary and very important. As a 4-H leader, you have a responsibility to do the best job you can in providing a fun, learning experience for the 4-H members. Planning will make this a reality.

The 4-H Volunteers' Handbook has lots of valuable information to help you and your members plan a successful club program. Refer to "The 4-H Meeting" section of your handbook for tips on planning successful meetings, effective communication, games, judging and special events. The chart on page 4, of this Guide, can be used to record your plans.

WHAT IS AN ACHIEVEMENT PROGRAM?

- An opportunity for members to share the knowledge and skills they have gained during this 4-H project.
- Each member should be involved in some way.
- Informs the public about the purpose and goals of the 4-H program.

Achievement Program ideas specific to this project are suggested below. Your club may wish to choose one idea or combine a few. Involve club members in selecting a suitable idea and making the necessary preparations.

Contact the local newspaper or radio to tell them about your activity, the date, the time and where it will be held.

Send out a personal invitation to the group that you plan to invite to the Program, or send out a personal request from your club to visit an organization and present your Achievement Program. Don't forget to include parents/guardians and/or family members.

Invite parents, the public, media and other youth groups to your Achievement Program.

Here are some suggestions. You may wish to choose one idea or a combination of a couple. The type of program should be selected by the second meeting. You may require some preparation time at your meetings prior to the Achievement Program.

- Members could display their poultry, show or commercial breeds, or eggs, at a 4-H Achievement Program. They should be encouraged to prepare a sign giving as much information on the breeding and health of the animal as possible. Such a sign could include sex, age, feeding requirements, history of the breed, etc. These displays could be done individually or as a group, depending on the number of animals, display space available and the suitability of the event.

- Members could put on a mock show of live birds, dressed poultry or eggs. It could include judging and a ringside commentary on the fine points of showing and an explanation of the judge's choices.

- Designate some members as Information Officers and prepare some material for them to hand out to the crowd as it views the 4-H displays. Another way to draw people to the display is to have a running commentary, delivered by a 4-H member with a microphone, on the local club, its projects and the display.

- Participate in an agricultural event, a mall display or visit a school classroom or a local supermarket. The club could set up a display (with or without animals/eggs) and have members available to answer questions about some aspect of poultry care. This display should include basic information on poultry breeds, as well as breeding and marketing.

FEEDBACK – LET US KNOW WHAT YOU THINK!

The 4-H Resource Development Committee of the Ontario 4-H Council reviews and evaluates 4-H resources. Comments and suggestions about 4-H manuals and guides are always welcome. They may be sent to the following address.

4-H Resource Development Committee
Ontario 4-H Council
R. R. #1 Thornloe, Ontario P0J 1S0
1-800-937-5161
lduke@ntl.sympatico.ca

At the bottom of the table of contents page in the Members' Manual you will see the Kids Help Phone logo and number. Kids Help Phone is available to over 7 million children and teenagers throughout Canada.

It is a national, bilingual, confidential, toll free helpline staffed by paid, trained professionals. In response to the problems and concerns of our youth, Kids Help Phone provides a listening ear, emotional support, counselling, information and referrals. Children and teens from anywhere in Canada can call anonymously 24 hours a day, 365 days a year.

Children and teens can call about anything that is bothering them, including abuse; drugs; alcohol; conflicts with parents, friends or teachers; pregnancy; sexuality; suicide; or parental separation and divorce.

Please mention this number to your members and explain what it is for. Make sure they know that it is free and they don't have to give a name or address.

The Kids Help Phone answers 1500 calls a day... 2500 more get a busy signal. If you or your club or someone you know would like to make a donation to the Kids Help Phone, call 1-800-268-3062.

4-H CLUB PROGRAM PLANNING CHART

MEETING OR EVENT	DATE	TOPIC ACTIVITY OR TASK	PEOPLE WHO COULD HELP	PRESENTATION IDEAS TO CONSIDER

MEETING ONE POULTRY BREEDS

SPECIAL NOTES FOR THIS PROJECT

1. Any page numbers refer to the Members' Manual unless otherwise indicated.

2. The Members' Manual has been designed as a reference source. Hopefully, the members can leave their manuals closed for most of the meeting, allowing them to observe, learn and take part in the discussion and other activities. It is not necessary to **read** all the information given in the Members' Manual during the meeting.

3. You are free to change the order of meetings and information if you like. Remember that if you do rearrange the order of meetings, you might need to reorder the Before the Next Meeting Activities so that they fit with the Roll Calls. The schedule of meeting dates can be recorded on page 4.

4. Remember to refer to your 4-H Volunteers' Handbook - You will find many useful tips and ideas covering topics such as program planning, successful meetings, parliamentary procedure, and effective communicating and presentation methods. Refer to your Volunteers' Handbook as you plan meetings. If you do not have a handbook, please contact your 4-H Association.

   It is important for everyone to become familiar with the basics of running a good meeting. Review with members the purpose of an agenda as well as the responsibilities of the executive. Have the club members elect an executive. The 4-H Volunteers' Handbook and the OMAFRA Factsheet, "Procedures for Meetings," (96-009) may be helpful.

5. Judging - Judging tips is an optional activity in meetings one through four of this project. These tips have not been included in the normal one hour meeting time. Each member should have a 4-H Judging Handbook (4-H-1550-91) and be encouraged to use it. These can be obtained from your 4-H association.

6. Fitting and Showing - Meeting Six is all about fitting and showing. It can be held whenever it is convenient for your club, depending on the date of the Achievement Program. If members will be showing at the Achievement Program, they should be encouraged to start working on their fitting and showing skills right from Meeting One. Keep tabs on members' progress. Some members may not have anyone at home to ask for help. It is a good idea to pair an experienced senior member with a junior member who could use some help or encouragement. Also, assist members in finding birds to look after if they are not from a poultry operation.

7. Optional Activities - There are meeting activities, meeting mixers and extra topics for discussion that have been listed in <u>THIS GUIDE ONLY</u>. They provide greater detail and information and should be used as a resource for meeting presentation.

OBJECTIVES OF MEETING ONE

1. To welcome members to the club.
2. To introduce leaders and members.
3. To make members aware of project requirements.
4. To guide members through the election of an executive.
5. To introduce the topic of poultry breeding and marketing.
6. To give some guidelines about choosing the right breed for their projects.

CAUTION!

Farm visitors can spread diseases within a farm and among farms. People spread contaminated material directly on footwear, hands and clothing.

Farm families hosting a 4-H meeting should ask visitors to comply with certain precautions to protect their livestock. This is called biosecurity, and protective measures may include the use of a sanitary footbath or wearing plastic disposable boots and clean coveralls. As a courtesy, 4-H members should arrive at the host farm with freshly laundered clothes and clean rubber boots. Upon returning home, 4-H members should change to different clothes and boots before entering their barn.

Remember that some diseases are spread very easily. Animal welfare, pride in stockmanship and peace of mind are all reasons to prevent the spread of disease. The cost associated with a disease outbreak is another.

PREPARATION AND EQUIPMENT

- "Poultry Industry and Poultry Management." 20 minutes (video). Discusses the development of the modern poultry industry in Ontario, the types of birds used and the reasons behind the various breed developments. Book through the A.V. Library, OMAFRA, 1 Stone Road West, Guelph, Ontario N1G 4Y2 (519) 826-3682 FAX 826-3358

- "Poultry Breeds." (video). Available from the OMAFRA A.V. Library, Visual Communications Services.

- Have you considered boning a chicken? Why not make it a group activity? There is certainly no better way to learn about the anatomy of a chicken and really getting a feel for how the bird is put together. And what's almost better, somebody can cook up a great meal with it after it is done! You will need a dressed chicken for this activity.

- If you shy away from boning a chicken as part of the meeting, you could still come with a poultry skeleton mounted on a board or in a box. Use this during the judging activity.

- Consider inviting a breeder of show poultry to be a guest speaker to impress upon members the diversity of poultry industry. Some of the fancy breeds are real eye-openers!

- Materials you will need for this meeting include:
  - Membership list or enrolment cards
  - Members' Manuals
  - "4-H Club Member Lives Here" and "4-H Club Project" signs (if available)
  - 4-H Judging Handbook for new members

TIME GUIDELINES

A time guideline has been provided for each section of the meeting. Please remember that this is only a guideline. The number of members, their maturity, specific interests and the way the meeting is structured will all influence the duration of specific activities.

IN A NUTSHELL

Meeting Mixer	5 min.
Getting Started	15 min.
Roll Call	5 min.
A Road Map to Good Meetings	20 min.
Breeds and Varieties	20 min.
Before the Next Meeting	5 min.
	70 min.

Optional: Judge's Corner
Digging Deeper

MEETING MIXER (5 minutes)

At this first meeting you should consider having a short activity to get your members talking to one another. Sometimes it is very difficult to get new members to talk or contribute to the meeting, but if you make a game out of it right from the beginning, somehow the ice is broken. The Roll Call questions for this club are all poultry jokes. You might extend this once in a while and ask if anyone has heard a good (or better!) joke.

Not all your members will know one another at this first meeting. A game like the Lucky Handshake game or Autograph Hunt is a good mixer.

- Lucky Handshake: Several pennies are distributed through the club. The people with the pennies are told to give them away to the fifth person they shake hands with. Each time the person holding the penny shakes someone's hand, he or she must say his or her name. This encourages mass handshaking and moving about the room.

- Autograph Hunt: Give each person a recipe card and a pencil as he or she enters the room. Tell the member to print his or her name along one side of the card. Use first and last names. The object is to find other members with first names starting with each letter in the name. If too many members have trouble finding enough first names, then use both first and last names, then perhaps middle names.

GETTING STARTED (15 minutes)

PREPARATION AND EQUIPMENT

For this meeting you will need:

- name tags
- enrolment cards and membership list
- "Club Member Lives Here" and "4-H Club Project" signs if available
- Basic Care Guides for Poultry for new members

1. Begin with the 4-H PLEDGE. Post a copy so everyone can see it.
2. WELCOME the members. Introduce leaders. Have members introduce themselves. Introduce the youth leader (if this has been decided). Ensure that everyone has a nametag.
3. Complete ENROLLMENT CARDS and MEMBERSHIP LIST.
4. Give a brief INTRODUCTION to the project.
5. Outline the OPPORTUNITIES members have such as taking part in the local fairs and shows, "4-H Go For the Gold", 4-H Members' Conference, etc.
6. DISTRIBUTE "4-H Club Member Lives Here" and "4-H Project" signs if available.
7. DISTRIBUTE the Members' Manuals.
8. Discuss the members' REQUIREMENTS for the project. (See page 1) Outline any expectations you have of the members.
9. Briefly discuss the ACHIEVEMENT PROGRAM - type, date, time, location.

The remaining time is used for activities related to the meeting material. Try to keep the members interested and involved by using a variety of techniques and activity co-ordinators. The leaders, youth leader, and any guests or senior members can become involved.

ROLL CALL (5 minutes) page 7

What do you call a chicken that crosses the road, rolls in the mud and comes back?
A dirty double-crosser.

BREEDS AND VARIETIES (20 minutes) page 8

Find out which members have already obtained their project animals. Ask them what arrangements have been made for keeping the animals. It might be a good idea to write the members' responses on a blackboard or flipchart.

Ask the members what they expect to get out of joining the 4-H club. There are social reasons for joining 4-H. As a leader, you can make sure that members enjoy their time more if you know what they expect to get out of the club.

BEFORE THE NEXT MEETING (5 minutes) page 9

Talk to members about this section. They should weigh their chickens at the end of the first, and the second weeks.

If junior members are going to be showing chickens or eggs, they should be given some advice about handling and presentation right away. Find out if a member will have anyone at home who is experienced and will to help him/her learn about fitting and showing. If not, try to match the junior with an experienced senior member to help with the training. Be sure you ask at later meetings how everything is going. This lets the younger members know someone is interested in them.

Advise the members to keep a record of how much feed and water 10 chickens eat over a two-week period and how much weight the birds put on. In this way, members will begin to understand the concept of the cost of production and how you compare one bird's rate of gain with another's and how this can relate to selection and culling.

JUDGE'S CORNER (Optional) page 9

It may be fun for members to learn the parts of an animal by playing a game. Tape together the larger diagrams on pages 35-40 of this guide, and post them on a flip chart or blackboard. Body part names are on pages 41 and 43 of this guide for you to cut apart. Allow each member to choose one from a hat. They can then pin the label on the appropriate place on the diagram. To make it competitive, have two teams do this and run it as a relay race. (A labelled diagram is included in the Members' Manual on page 9.)

DIGGING DEEPER –Optional Information for Seniors, Separate Handout

This chart is to serve as a stimulus for discussion about the future growth of the poultry and egg industry. Here are some questions you might want to use to get members talking.

- Ask members why they think there have been such gains in production efficiencies in the last 40 years.
- Are there likely to be similar gains over the next 40 years or have we reached the limit?
- What gains would they be looking for as producers?
- Are they more concerned with market expansion or getting more from each bird?

BONING A CHICKEN

There's no better way to learn how a bird is put together than to bone it. The object here is to separate the meat from the skeleton, leaving the skin in one piece with the meat attached and the skeleton whole. It sounds tricky, but all you need is a sharp knife and some patience.

A boning knife is really the proper tool to use to do this job but any small knife with a sharp, pointed blade will do. It may not be pretty, but it will do.

During the entire boning job (and it is not too difficult once you have tried it!) be careful not to pierce the skin except for the initial cut. All through the cooking period, the skin acts as a protection for the meat.

Always keep the tip of the knife pointed toward the skeleton and stay close to the bone at all times. When all the bones are out, the result, when held up, should look like a small child's jumper, with the wings and legs pulled up inside.

Begin by placing the bird breast down on the board. Make a cut the entire length of the spine, through both the skin and flesh. Follow as close to the frame as you can cut, pushing the skin and flesh back as you cut.

Work first toward the ball-and-socket joint of the shoulder, cutting it free and boning the shoulder blade. Pull the wing bone through from the inside, bringing the skin with it. Bone the meat from the wing and reserve it. Then strike for the ball-and-socket joint of the leg and pull the bone through. Reserve the meat. After you have freed and reserved both wings and legs, continue to work the meat free, first from one side of the body, then from the other, until the centre front of the breastbone is reached. Here great care is needed to free the skin without piercing it, as it is very thin at this point. You should now be able to get the whole skeleton out. When the skeleton is removed, wash the skin and flesh in cold running water and pat with a towel until it is very dry.

You now have a skeleton that you can label and a deboned chicken that you can cook. A deboned chicken is usually stuffed, baked and then served warm or cold.

SOS STUFFING
(This is enough stuffing for a 1.4-1.8 kg (3-4 lb) chicken, boned.)

125 mL	diced onion
125 mL	diced celery
350 g	sausage meat
12	slices stale brown or white bread, cubed
	pinch of sage
	salt
	pepper

Fry the onion, celery and sausage meat together until meat is brown and onion and celery are tender. Pour over the bread cubes. Add sage, salt and pepper. Mix well.

Spread this stuffing over the deboned chicken. Fold one end of the chicken skin over the other and secure them with three skewering pins. Turn the bird over so it is breast side up. Pat it a bit to make it look as much like a chicken that is still on the bone as possible. Spread a little butter over the breast skin and roast in a preheated 176°C (325°F) oven for about 45 minutes to an hour or until golden. Baste frequently.

Remove from the pan and let cool. Slice and serve.
Serves 6-8.

MEETING TWO MAKING THE RIGHT CHOICE

OBJECTIVES

1. To demonstrate the differences between a good bird and a poor bird for production or show purposes.
2. To demonstrate how to properly handle a bird.

PREPARATION AND EQUIPMENT

- Visit a commercial broiler farm, a commercial egg producer or a small dual-purpose flock.
- Visit a breeder of fancy show chickens to talk about the importance of conformation.
- Allow members to practice catching the animals. Members might also like to practice taking a chicken out of a cage and holding it properly. Try to get birds that are used to being handled.
- Have 3 or 4 layers that differ in rates of lay as well as a non-layer. Have members describe the birds, using the descriptive terms in the section titled "A Bird in the Hand." Again, try to get birds that are used to being handled.
- If you are going to carry out the judging activity, you will need something to judge. The example in the Members' Manual uses pencils, but you can use 4 of anything you fancy - hats, shoes, mittens.
- Invite a guest speaker to talk about disease and infestation problems with chickens. This could be an information presentation by the owner of the facility you visit, or you could invite a poultry specialist. If you invite a guest, make sure you have him/her participate in other parts of the meeting, such as handling and examining the birds.

IN A NUTSHELL

Roll Call	5 min.
Choosing the Right Birds	10 min.
Handle with Care	25 min.
A Bird In the Hand	20 min.
Before the Next Meeting	5 min.
	65 min.

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 11

Where does a duck go when it's sick?
To the duck-tor!

CHOOSING THE RIGHT BIRDS (10 minutes) page 13

If you are visiting a dual-purpose flock and the meat birds are being raised alongside the layers, ask the members to look at the birds and figure out which ones are being raised for meat and which are layers.

If not, ask the members to try and pick out the poor producers or unthrifty birds.

HANDLE WITH CARE (25 minutes) page 12

To start this section, the leader should talk about proper handling techniques, while holding a bird. Not all the members will have the opportunity to take a bird out of the cage, hold it and examine it. Divide up these activities and let as many members participate as possible. The more inexperienced members should be allowed to hold the bird, even if only for a short while. Perhaps they could carry out one of the examination steps, with supervision.

A BIRD IN THE HAND (20 minutes) page 13

Every member should get a chance to hold at least two different birds and see if they can pick out any differences. Pair off the senior or more experienced members with a junior or inexperienced member to ensure that as many members as possible get a chance to compare birds.

BEFORE THE NEXT MEETING (5 minutes) page 14

By taking measurements and making a rough sketch of the area where they keep their birds, members will be able to measure the housing they have for their birds against the "ideal" conditions we talk about at the next meeting. Encourage members to draw the sketch as closely to scale as possible.

JUDGE'S CORNER (Optional) page 14

This activity emphasizes that when we are judging, we are comparing all the animals to an ideal type and choosing the best from that group. The exercise in the Members' Manual uses pencils but you can use shoes, tennis balls, hats or anything you fancy.

DIGGING DEEPER – Optional Information for Seniors, Separate Handout

If you are visiting a commercial egg production facility, look for a couple of hens to illustrate the bleaching process.

Talk to the producer or guest speaker about disease and infestation problems and the procedures he or she uses to guard against them.

MEETING THREE INCUBATION AND BROODING

OBJECTIVES

1. To demonstrate the different stages of embryonic development.
2. To emphasize that proper care of a chick from the start will pay off.
3. To demonstrate the proper method of candling eggs.
4. To demonstrate the proper care of chicks.
5. To alert members to potential problems in the brooding house.
6. To make members aware of the importance of proper housing for poultry.

PREPARATION AND EQUIPMENT

- A field trip to a hatchery for any poultry species or brooding house would be of great interest to members.

- Have members make a quick and easy candler. You will need a large shoebox or something like it, a powerful flashlight, masking tape and a sharp knife or pair of scissors for each candler.

- You will also need a lot of eggs for activities, especially if you are going to be judging. Eggs are normally judged in flats of 22 dozen, but as a starter exercise have members form teams and judge only 4 eggs. They will have to judge them inside and out, so have several candlers available for them to use.

- Have some fertilized eggs so members can compare them with unfertilized ones. You may decide to candle eggs with embryos at different stages of development. Please be aware of the age and sensitivities of the members for this activity. Candling fertilized eggs and embryonic eggs should be all right but consider your members carefully before you suggest breaking the eggs open and checking out the embryos. Some members might find this very upsetting.

- Use brown and white eggs of all sizes for the judging activity. After the judging activity, if you decide to do one, have the members break the eggs and separate the yolks from the egg white (also called albumen). Then measure the differences in size and weight for the yolks and albumen of the various sizes and the different colours. You will need glass measuring cups and kitchen weigh scales for this. What you want to find out is if a large egg has a larger yolk than a medium egg, or if there is just more albumen (egg white).

- Try to have eggs of different degrees of freshness, and when you separate the yolk from the albumen, check the condition of the albumen. Show members how the quality of the albumen relates to the freshness of the egg. The more watery the albumen, the older the egg. You might want to refer to the labelled diagram of an egg, on page 18 of this guide.

IN A NUTSHELL

Roll Call	5 min.
What Goes On Inside	10 min.
Candling Eggs	25 min.
Hatching the Egg	15 min.
Brooding	15 min.
Brooder Management	15 min.
Before the Next Meeting	5 min.
	90 min.

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 15

What do you get when you cross a duck with a cow?
Milk and quackers

WHAT GOES ON INSIDE (10 minutes) page 15

Use the diagrams in the Members' Manual to quickly review the different developmental stages of the embryo inside the egg.

CANDLING EGGS (25 minutes) page 16

This is an essential skill for any producer. Instructions are included in the Members' Manual for a simple candler. Divide members into groups to make candlers that they can use for the rest of the meeting. Practice using them by having the members candle the eggs you have brought with you. You may want to candle some fertilized eggs alongside unfertilized and even show eggs at different stages of embryonic development. If you are going to do the latter, please be considerate of your members' feelings. Some members might find this activity upsetting.

HATCHING THE EGG (15 minutes) page 17

If you are visiting a hatchery, this section may take a little longer than the allotted time but your members will enjoy it greatly. Be sure to talk about the different incubators and show examples if they are available. Otherwise, photographs will do as well.

BROODING (15 minutes) page 19

Emphasize to members the importance of proper preparation of the brooding house. A little care and thought at the beginning will save a lot of time and headaches later on. Stress the importance of cleanliness in preventing the spread of disease.

BROODER MANAGEMENT (15 minutes) page 20

The basics for having a happy, healthy, productive flock are temperature, floor space for each bird, lights, water and feed. If you know how to control these factors, you'll be on the way to success.

As their meeting activity, members were to roughly sketch their brooder areas. Have them review their layouts against the "ideal" discussed at this meeting. Are there improvements they could make? Be sure to ask if they have any questions about changes they might need to make.

BEFORE THE NEXT MEETING (5 minutes) page 23

Members are to go through their cupboards or kitchens and find three products that have eggs in them. This is to introduce members to the variety of products that use eggs.

JUDGE'S CORNER (Optional) page 23

First, have the members figure out some of the desirable characteristics for eggs. Then, using the judging card in the back of their Member's Manuals, let the members judge the eggs and give their reasons for choosing one egg over another.

The judging activity should be made easier for junior members, perhaps by letting them judge for only two or three traits on the card. You could also pair junior and senior members and have them judge on one card.

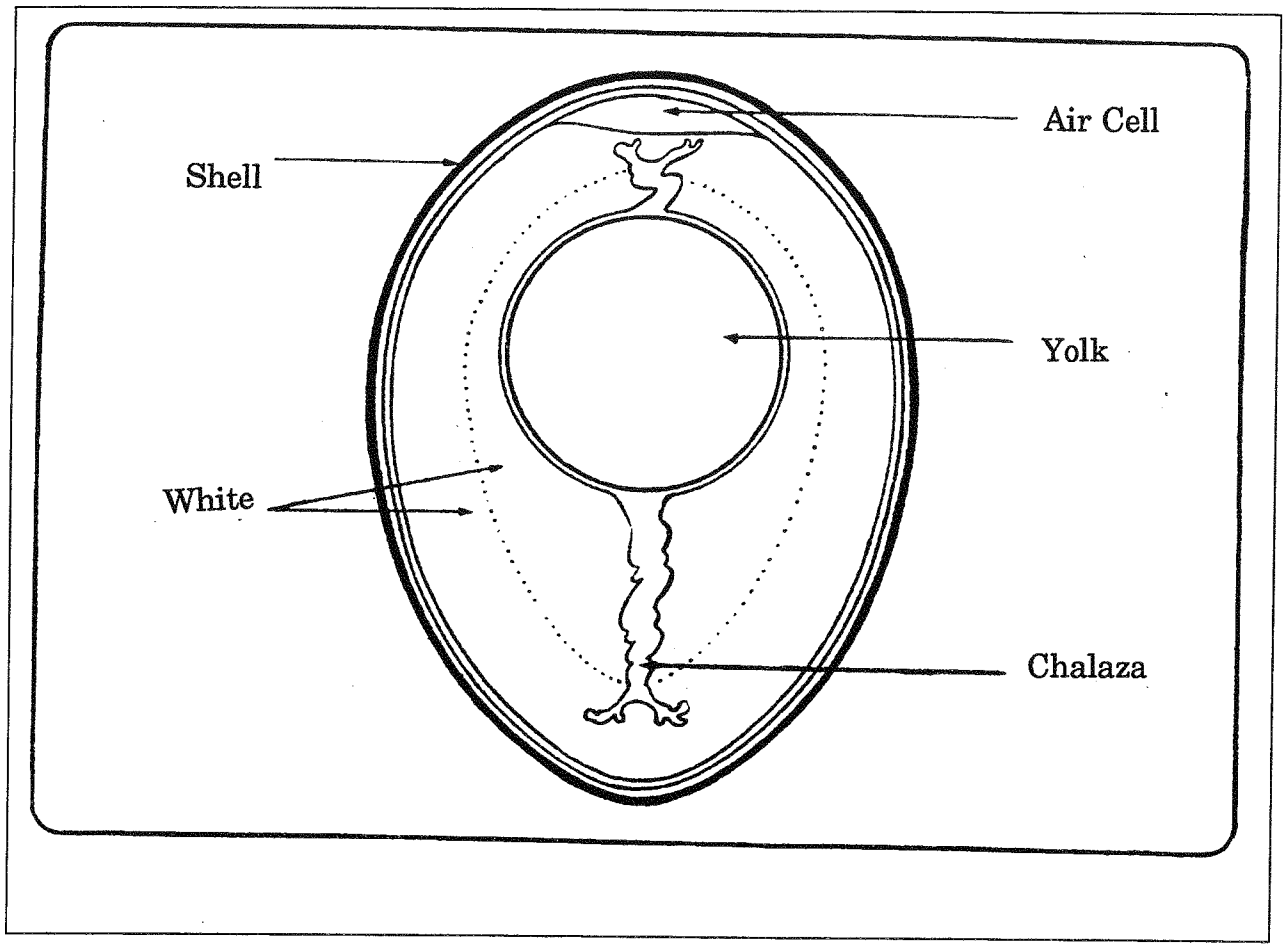
DIGGING DEEPER – Optional Information for Seniors, Separate Handout

Ask members what they would do in the event of a certain problem appearing in their brooding house or incubator and check their responses against the charts provided in the Members' Manuals.

SUGGESTED QUESTIONS

What's wrong if embryos are dying at 12-16 days?
What if chicks are fully formed in the shell but are dead?
What if all of the chicks are huddled against the chick guard in the brooding house?
What can you do about vent pasting?
Have members had to deal with any of these problems?
What other problems have they had with their own birds?

SUPPLEMENTARY INFORMATION FOR LEADERS



Yolk: Colour almost completely dependent on naturally occurring pigments in the diet. Hens fed wheat produce pale yolks while those fed corn or alfalfa produce darker yolks. Has no effect on flavour or nutritional value of the egg.

Air Cell: The space formed between the inner and outer shell membrane created by the contraction of the egg contents when cooled. It may be an indication of quality and the size depends on holding conditions.

Germinal Disc: On an infertile egg, this appears as a small, light-coloured spot on the yolk surface. Generally, commercially produced eggs are infertile.

White: Or albumen. Consists of a thick layer that surrounds the yolk, and a thinner layer surrounding that which adheres to the shell membrane at one or both ends.

Chalaza: Part of the inner thick albumen layer enclosing the yolk and extending into the surrounding white as twisted cords. Its purpose is to keep the yolk in the centre of the egg. A thick strong chalaza generally indicates high quality.

Shell: Colour depends on the breed of hen and is not related to flavour or nutritive value.

Blood Spot: Results from the breaking of a tiny blood vessel during the formation of the egg. Occurs in a very small percentage of eggs. Is easily removed and does not change nutritive value, flavour or cooking performance.

The composition of an egg varies with the egg size and breed of hen. Generally, it is:

Albumen	—	56-61%
Yolk	—	27-32%
Shell	—	8-11%

The average whole egg is composed of 40% yolk and 60% albumen.

MEETING FOUR MAKING THE GRADE

OBJECTIVES

1. To introduce members to the role of marketing boards for poultry and eggs.
2. To explain how prices are established under marketing boards.
3. To explain grade requirements for chickens and eggs.
4. To introduce members to the variety of markets for poultry and eggs.

PREPARATION AND EQUIPMENT

- Visit an egg grading station or processing plant.

- Visit a pheasant, duck or other non-traditional poultry farm in your area and discuss production and marketing with the producer.

- Borrow the video, "Extraordinary Eggs", 11 minutes, 1986. Available from the A.V. Library, Visual Communications Services, OMAFRA, 1 Stone Road West, Guelph, Ontario N1G 4Y2 (519) 826-3682 FAX (519) 826-3358. This looks at the automated process of grading and distribution and also discusses the many uses of eggs.

- Have a producer attend as a guest speaker to talk about the importance of quota and COP. It would be very interesting if you could invite someone who was a producer before or during the time of the marketing boards.

- If members will be completing the Digging Deeper section, you might want to have some examples of the different grades of poultry meat or eggs.

IN A NUTSHELL

Roll Call	5 min.
Marketing Boards	10 min.
A Licence to Produce	10 min.
Making the Grade	10 min.
Fancy Poultry	5 min.
Before the Next Meeting	5 min.
	45 min.

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 25

What is a vampire's favourite holiday?
Fangsgiving

MARKETING BOARDS (10 minutes) page 25

Most of the members will know something about marketing boards and their function. Begin this section by asking them if they know what the poultry or egg business was like before there were marketing boards. Were their families in the business before the marketing boards? What do they think the benefits of marketing boards are? What are the disadvantages of having marketing boards?

A LICENCE TO PRODUCE (10 minutes) page 26

Everyone has to have quota to sell eggs, unless you have 99 hens or less. How does having quota protect producers? Is the quota system unfair for those who don't have it but want to get into the poultry or egg business? How do they affect prices for producers? For consumers? These questions are possible points of departure for discussions on the value of quota and the marketing board system.

MAKING THE GRADE (10 minutes) page 27

The point to emphasize here is that all meat food products sold in Canada are safe for human consumption. A grade less than Grade A does not mean that the meat is not edible, it just means that the appearance is less than perfect. This could mean that the carcass is damaged in some way, in the case of poultry meat, for example. How many members have eaten a utility turkey at Thanksgiving? Did the meat taste any different than a Grade A turkey?

You may also wish to draw the members' attention to the various egg sizes available. Refer to the sizing chart at this time.

Also, when discussing egg grading, particularly the interior quality of the egg, you may want to use the labelled diagram of an egg interior again.

FANCY POULTRY (5 minutes) page 28

BEFORE THE NEXT MEETING (5 minutes) page 28

Food advertising will be the focus of the next meeting and members can use their favourite ads as inspiration for their activities.

There's also an opportunity for senior members to debate as a Digging Deeper activity in Meeting Five. If you plan to have the debate, you may want to suggest members do some research before the debate, or to choose teams for and against. The question is: Resolve that chicken is the best meat you can eat.

JUDGE'S CORNER (Optional) page 29

At the back of the Leaders' Guide there are scorecards for judging eggs, dressed chickens and fancy poultry. Judging eggs would be easier and less expensive. However you may feel your club would benefit from judging either dressed chickens or fancy poultry, in which case you could use the other scorecards provided.

DIGGING DEEPER – Optional Information for Seniors, Separate Handout

The grade requirements for chicken and eggs are very specific and it's important for producers to know what they are aiming for.

MEETING FIVE TO MARKET, TO MARKET

OBJECTIVES

1. To emphasize the importance of advertising and promotion for producers and processors.
2. To give members a chance to design their own advertising campaigns for a new poultry or egg product.

PREPARATIONS AND RESOURCES

- Visit a supermarket. Phone first and set up your visit with the store manager. If you can have a nutritionist show you around, that would be great. Checking out the variety of poultry products will be fun, but finding all the products that list egg as part of their ingredients could be challenging. Divide the members into teams and give them a goal of 10 products with eggs in them. Impress upon members that they must be quiet and courteous to shoppers in the store while they are chasing down their lists.

- Members will be designing advertising materials for a new product. You will need some poster paper, markers, scissors and glue.

PROJECT COMPLETION

Read the note on page 32 of this Guide. If you want members and parents/ guardians to complete the Project Summary sheet, copies should be given out at this meeting.

IN A NUTSHELL

Roll Call	5 min.
Making the Sale	10 min.
On the Way to Market	5 min.
It Pays to Advertise	10 min.
Past the Farm Gate	30 min.
	60 min.

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 31

Why did the farmer scold the chicken?
Because it used fowl language

MAKING THE SALE (10 minutes) page 31

How many different ways have the members eaten chicken? Eggs? Turkey? How many times did they eat poultry or eggs last week?

ON THE WAY TO MARKET (5 minutes) page 32

Can the members name some processed egg products? Answers might include mayonnaise, cake mixes, and salad dressings.

IT PAYS TO ADVERTISE (10 minutes) page 32

Which tastes better - a McDonalds's hamburger or a Wendy's burger? Who has the best advertising campaign? Do members have a favourite advertisement? Does it affect where they shop or where they eat? What makes a good advertising campaign? Now is the time to review the members' favourite ads.

PAST THE FARM GATE (30 minutes) page 33

Members have been given two new products to advertise. Divide the club into groups and have each group come up with an advertising campaign to launch one of these new products. Remind them to pay attention to the potential consumer and what will appeal to him or her. Refer them to the examples of the "Get Cracking" campaign.

At the end of the meeting have the club vote on the most effective campaign, the funniest, the most inventive or whatever.

BEFORE THE NEXT MEETING page 36

Review the preparations for Meeting Six, which is the fitting and showing meeting. Make sure members understand what they will be doing, and what they need to bring, if anything.

JUDGE'S CORNER (Optional) page 36

Review the procedure for giving reasons.

DIGGING DEEPER – Optional Information for Seniors, Separate Handout

Senior members will have prepared to debate the statement, "Resolve that chicken is the best meat you can eat."

THERE'S MORE TO DEBATING THAN ARGUMENT

Primarily a debate is a contest where people attempt, through formal argument, to determine who is right. **The object is not to determine the truth of the resolution being discussed, but rather to decide which of the two teams shows greater skill in debating.** Those skills show the ability to organize material, to analyze, and to speak clearly and convincingly.

Briefly, a debate is organized with two teams of two people, a chairperson, a timekeeper, and a set of judges. The teams argue about a resolution that is presented as a positive statement. Example: Resolve that the moon is the ideal place for honeymooners. The team that supports the resolution is called the affirmative. The opposing team is the negative side.

FORMAT

The chairman introduces subject and debaters.

The first affirmative team member speaks five minutes with a warning at four minutes. The opening of the debate is to define the terms of the topic as the affirmative understands them. The member should continue to make whatever points he/she feels supports the resolution.

The first negative team member asks one question. Affirmative has one minute of preparation time, and one minute to present an answer.

The first negative team member speaks five minutes, including any refuting statements, with a warning at four minutes.

The second affirmative team member asks one question. Negative has one minute of preparation time and one minute to present an answer.

The second affirmative team member speaks five minutes including any refuting statements with a warning at four minutes.

The second negative team member asks one question. Affirmative has one minute of preparation time and one minute to present an answer.

The second negative team member speaks five minutes, including any refuting statements, with a warning at four minutes.

Consultation for two minutes is then allowed. The **first affirmative team member refutes** for two minutes.

JUDGING

Basic Guide:

Subject matter -	40 points
Delivery -	35 points
Rebuttal -	25 points
TOTAL	100 points

A poor debater does little more than give a prepared speech. **A good debater refutes the opposition's points in both the rebuttal and the prepared address.** A good rebuttal is an impromptu effort. Often it is the means of winning the debate.

DUTIES OF DEBATERS

1. Prepare a series of statements supported by evidence. Use:
   - **D** **demonstration** — relevant, easy to understand.
   - **E** **example** — familiar to listeners, specific.
   - **B** **be prepared** — anticipate opponent's arguments and steal his/her thunder.
   - **A** **analogy** — prove by inference.
   - **T** **testimony** — recognized authority, not prejudiced.
   - **E** **exhibit** — from everyday experience, clear.
   - **S** **statistics** — few, round figures, compare.

2. Listen carefully for loopholes to attack evidence. Look for weak, unsupported statements.

   Ways To Attack

   (a) Evidence is not sufficient.
   (b) Evidence does not support conclusion.
   (c) Evidence is distorted or inaccurate.
   (d) Evidence comes from an unreliable source.
   (e) If it is an illustration or comparison, show that a different conclusion can be reached.
   (f) Evidence is evasive. "I think..." "Do you know..."

3. Speak confidently, sincerely and positively. Yet, be friendly. Have a good sense of humour. Unless the speaker can make the audience feel that he/she is competent to lead their thinking and their feeling, they will not follow him/her. Sell yourself!

MANNERS PLEASE!

At all times, be polite. Always address the opposition as "my honourable opponent" or "my worthy opponent".

No one is dumb, stupid or ignorant. Use the "royal we" or "my colleague".

NEVER, NEVER ADMIT OR CONCEDE!

Charm your audience and disarm your opponent.

MEETING SIX IT'S SHOWTIME!

OBJECTIVES

To encourage 4-H members in training, grooming and showing poultry or eggs.

PREPARATION AND EQUIPMENT

Information on Fitting and Showing is available for members. Order 4-H 1900 98 FSE through your OMAFRA contact.

There are many options for this meeting. It could be held during the regular meeting time frame, with demonstrations and perhaps some hands on practice. It could also be organized as a half-day clinic. For this project you shouldn't need more than half a day, and then only if you have members who are showing fancy poultry. You may want to cover this information earlier in the project and make this Meeting Two or Three.

Conducting a half-day workshop is a major undertaking and requires the work of several people. Delegate responsibilities and appoint committees to look after specified activities. Parents are a great resource and should be involved early on.

First, decide on the location of the meeting. A committee could help with any site preparation.

For members who will be showing their birds, you will need to have an experienced exhibitor to demonstrate the techniques of grooming. Experienced senior members can help here, too. If you have members who are showing dressed birds or eggs, you may want to give practical pointers on presentation and appearance.

Be sure to include a showmanship demonstration for everyone, regardless of what they are showing. If you have a show like this, be sure to make it very constructive by having the judge give tips to each member about his or her presentation. As leader, you should follow up the judge's comments with some positive advice to your members about showing.

Be sure to have a crew assigned to clean up at the end of the event!

Senior members can be very helpful to Juniors with presentation, grooming and showing techniques.

IN A NUTSHELL

Roll Call	5 min.
Eggs-actly Right	20 min.
Showmanship of Dressed Poultry	20-40 min.
Showmanship of Fancy Poultry	20-40 min.
	65-105 min.

Optional: Digging Deeper

ROLL CALL (5 minutes)

Name one thing to remember when showing a chicken at a poultry show.

Members might include such things as making sure the bird is clean, the showperson is wearing white, removing the chicken carefully from the cage, holding the chicken properly, etc.

EGGS-ACTLY RIGHT (20 minutes)

SHOWMANSHIP OF DRESSED POULTRY (20-40 min.)

SHOWMANSHIP OF FANCY POULTRY (20-40 min.)

BEFORE YOU GO

Make sure members are aware of all the details for the Achievement Program.

DIGGING DEEPER – Optional Information for Seniors, Separate handout

PROJECT COMPLETION

A Certificate of Completion and a Project Summary have been included in this Guide, pages 44-45. Your signature on either of these indicates you feel the member has completed the project to the best of his/her ability. Space is provided for you to add some individual comments to offer encouragement to the member. The Project Summary sheet also asks for written feedback from the member and his/her parents/guardians. (The questions on this sheet have been selected from the informal evaluation sentences, listed below.) Select whichever sheet best meets your needs and make copies for the members.

THANK YOU FOR BEING
A VOLUNTEER 4-H LEADER!

EYE	TOES
EAR	SKULL
EAR LOBE	FOREARM
SADDLE	UPPER ARM
SICKLES	SHOULDER
HOCK	HIP BONE
SHANK	PUBIC BONES
SPUR	THIGH
COMB	SHANK
WATTLES	BEAK
HACKLE	COLLARBONE
BREAST	KEEL
SECONDARIES	PRIMARIES
THIGH	

PROJECT SUMMARY - POULTRY

(Complete at the end of the project)

A. Member Comments:

1. I joined this club because … _____

_____

_____

2. I really enjoyed … _____

_____

I didn't enjoy ... _____

_____

3. If I was to take this project again, I would change … _____

_____

_____

4. I learned ... _____

_____

5. I'm glad ... _____

_____

B. Parent/Guardian Comments: _____

_____

_____

C. Leader Comments: _____

_____

_____

This project has been completed satisfactorily.

Member _____ Leader _____

Date _____ Leader _____

4-H Ontario

POULTRY

Breeding and Management

Congratulations on successfully completing this 4-H project.

_____

_____

_____

_____

_____

_____

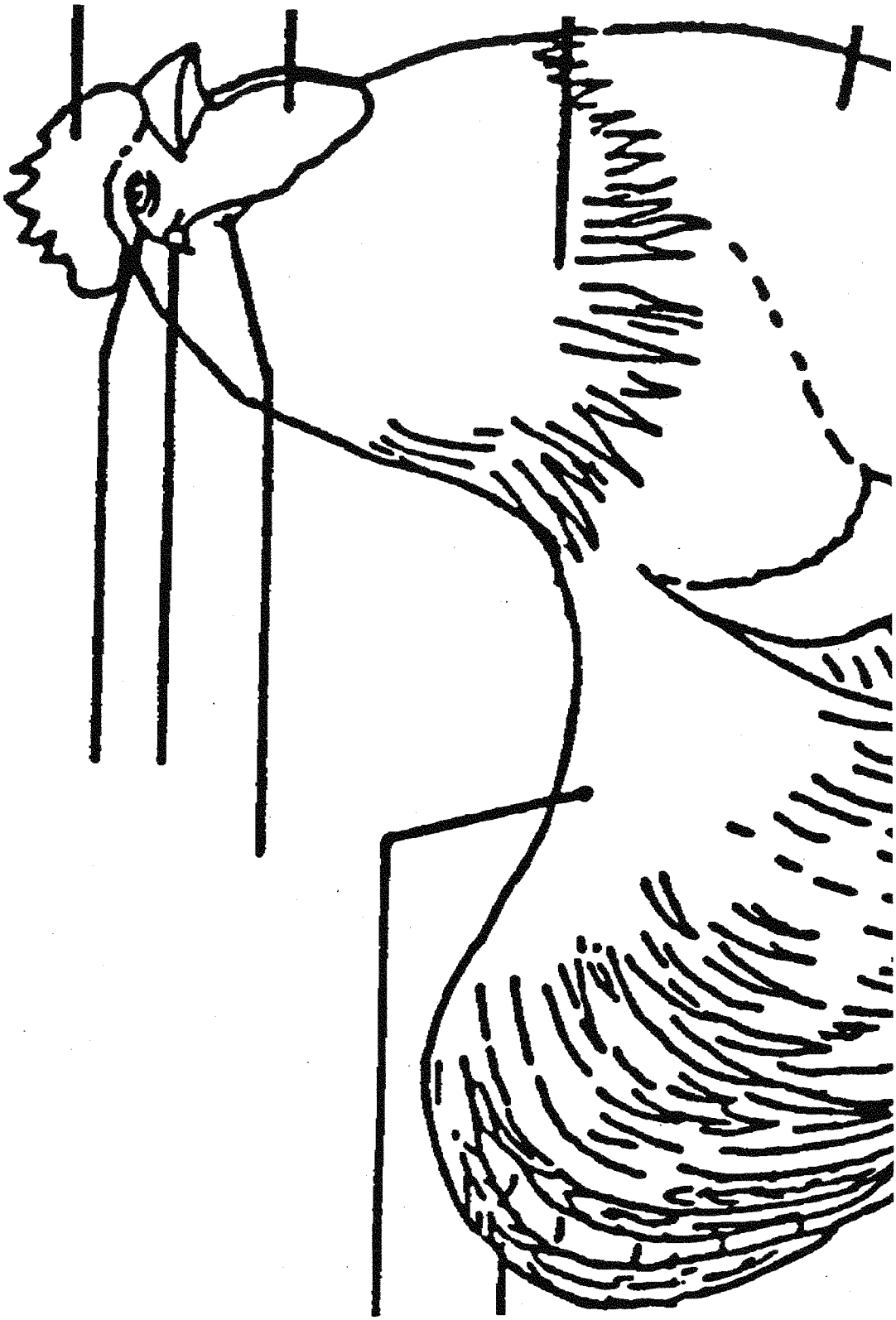
_____ _____

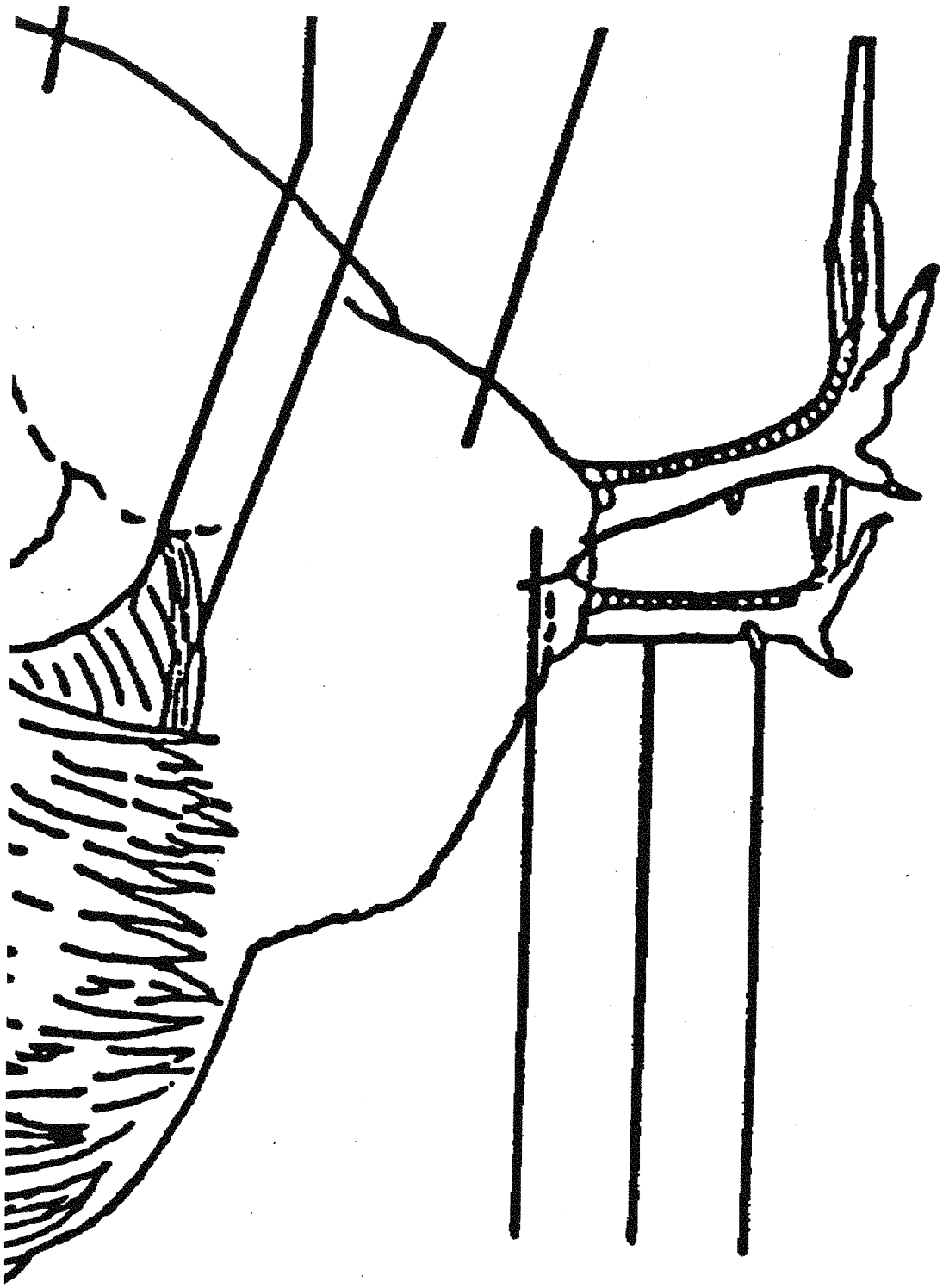
Date ***Club Leader's Signature***

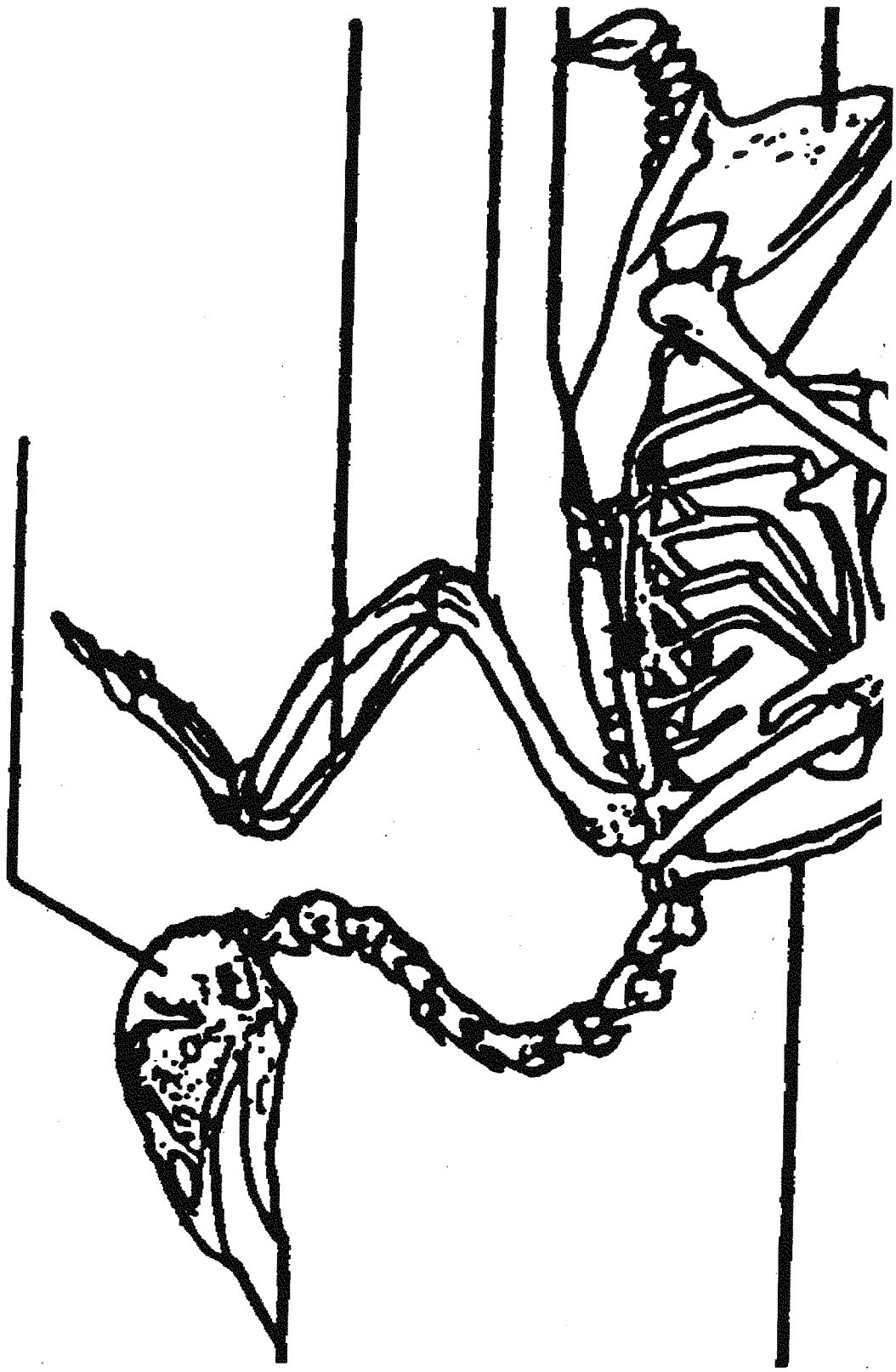
TRIPLE Name three purposes or types of poultry. - meat - eggs - laying - show or ornamental	SINGLE What is the difference between a broiler and a roaster chicken. A broiler is marketed at a lighter weight.
DOUBLE Name the two uses for poultry eggs. Human consumption; to be hatched for future stock.	HOME RUN Name four things that should be provided from poultry housing. Any four: - protection from weather and predators - fresh air - comfortable environment - clean surroundings - easy access to feed and water
SINGLE What % of the cost of production is due to feed costs – 25%, 50%, 75%, or 100%? - 50%\	DOUBLE Name four parts of a chicken. (Four new ones if this question has already appeared.) Any four: - comb, ear, beak, wattles - ear lobe, eye, toes, hackle - saddle, sickle, primaries - secondaries, breast, thigh - shank, spur, hock
TRIPLE Name three types of poultry housing. - free range - caged - floor managed	HOME RUN Name four structural loads a poultry building must withstand. - snow, wind, weight of birds - weight of litter and droppings - weight of equipment such as tractors for cleaning - weight of mechanical feeding equipment

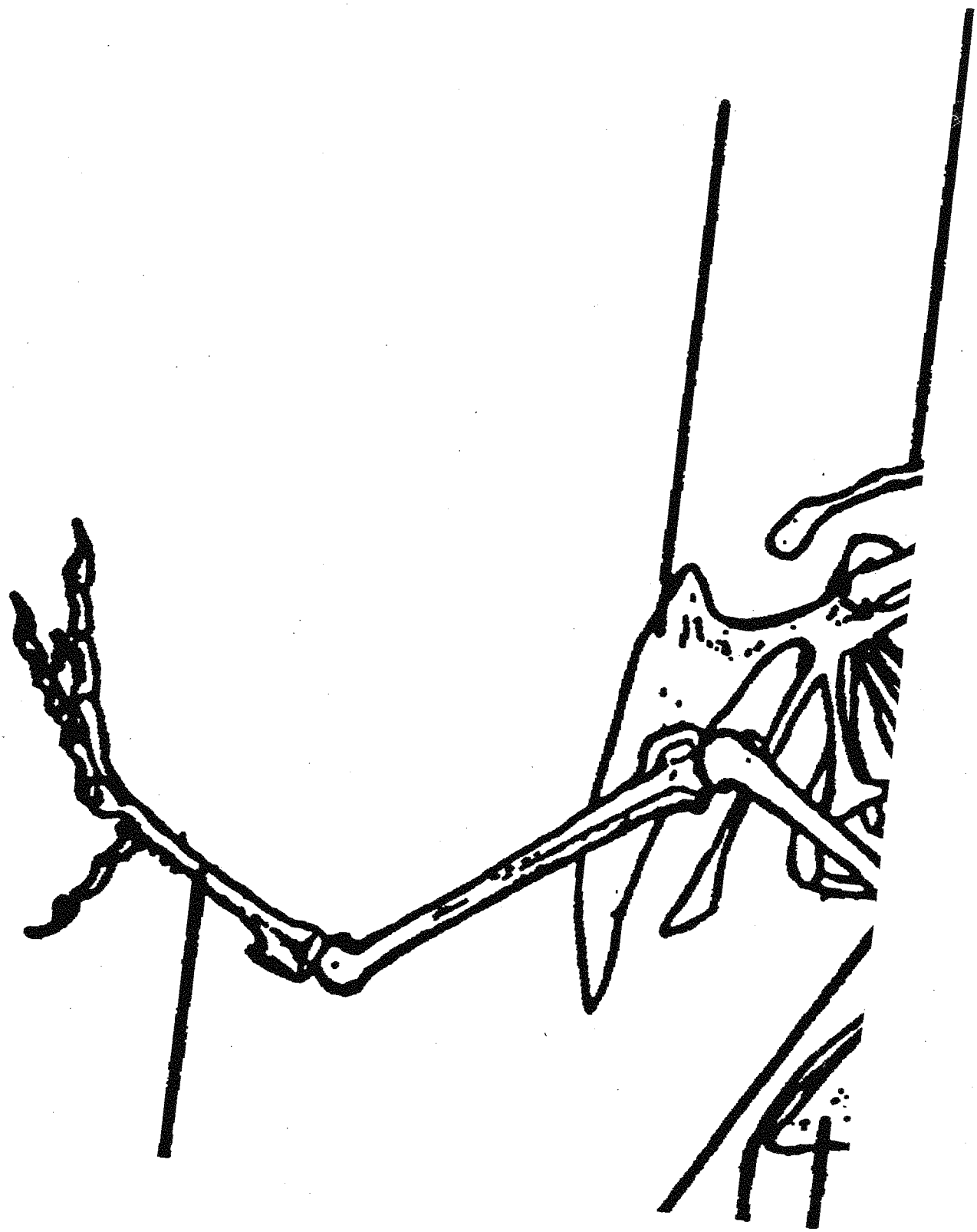
DOUBLE What should a heating system provide in order to produce comfortable conditions for baby chicks? An overall warm temperature level plus areas that are warmer so birds can select the zone of comfort.	SINGLE Why does a bird require energy? As fuel in order to move around, grow, stay warm, etc.
DOUBLE Name the forms of energy. (You can steal another base and make it a triple if you know which provides more energy.) - fats - carbohydrates (Fats provide more energy on a gram per gram basis.)	SINGLE Why does a bird require protein? Construction of: - muscles - skin - feathers - skeleton - internal organs - nervous system etc.
SINGLE Why does a bird require water? Regulate body temperature, help move food through the body, eliminate wastes, etc.	SINGLE What is the most important mineral for laying eggs? Calcium (is used for shell production)
SINGLE What is the function of a gizzard? Grind feed into smaller particles.	TRIPLE Name three parts of a bird's digestive system. Any three: - mouth - esophagus - crop - proventriculus - gizzard - small intestine (ileum and duodenum) - large intestine - cecum, cloaca
DOUBLE What is the feed efficiency of a modern broiler chicken? - 1.75	DOUBLE Name the two phases of a broiler diet. Starter ration from day old to 3 weeks, followed by a finisher diet until market age.

SINGLE Does a chick need a higher or lower level of protein than an older bird? Why? Higher; because it is growing so fast during the first few weeks.	DOUBLE Two to three weeks before egg production begins, pullets should be put on a diet containing an increased level of protein and energy. Why? As the hen comes into production, she needs more nutrients per gram of feed.
DOUBLE Why should you avoid frequent drastic changes in the diet of bantams? This may cause hens to stop laying and begin molting or losing feathers.	SINGLE Why should you clean and disinfect poultry housing and equipment after each group of birds? To destroy organisms and parasites that could cause disease.
SINGLE Why should you isolate poultry from other livestock? To prevent crossinfections from other livestock.	DOUBLE What is the best method of disposing of dead birds? Incineration; because heat destroys disease organisms.
DOUBLE What is flip-over disease? Young, healthy and fast growing birds die suddenly and end up laying on their back.	DOUBLE What is a sign of heat stress? - panting - stretched out neck - raised wings - decreased activity - death
WALK	HIT BY PITCH
HIT BY PITCH (Batter advance 1 Base)	





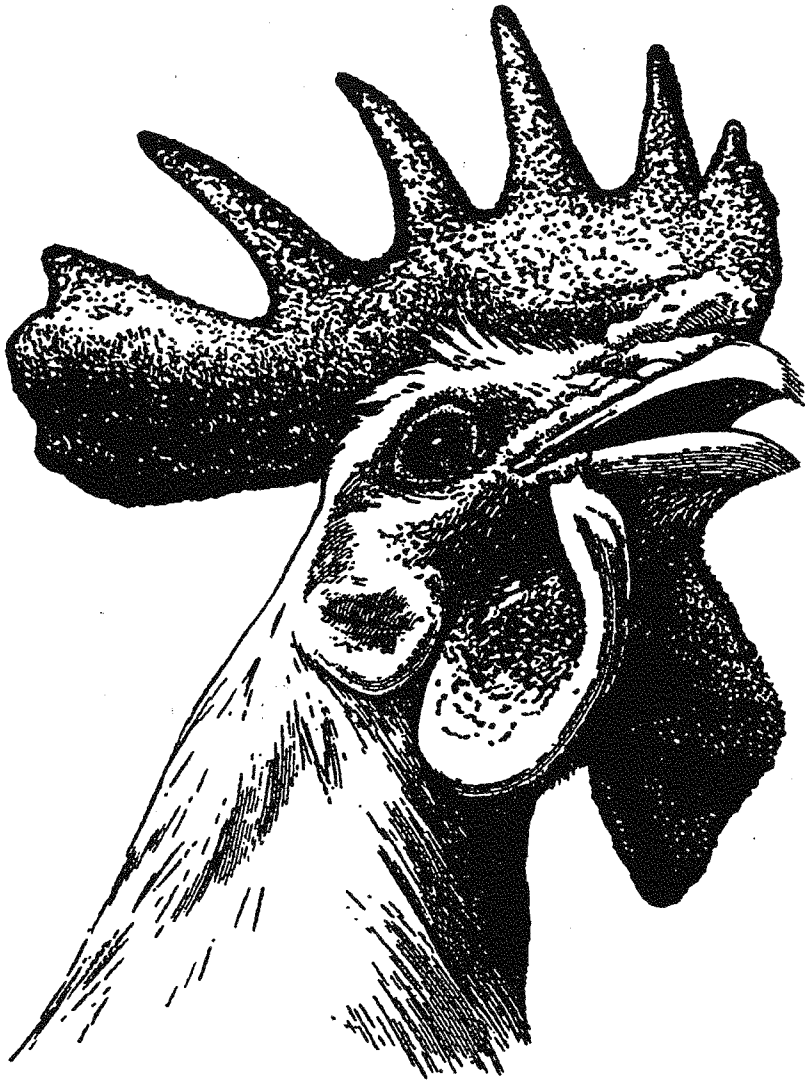




CANADA

LEARN TO DO BY DOING

POULTRY
Breeding and Marketing



NAME _____ AGE _____

CLUB _____ NUMBER OF CLUBS _____

Ontario 4-H Council

Ontario
Ministry of Agriculture,

4-H Ontario

4-H 1900 00 ME

The Ontario 4-H Program provides opportunities
for the personal development of youth.
http://www.4-hontario.ca

THE 4-H PLEDGE

"I pledge:
My Head to clearer thinking
My Heart to greater loyalty
My Hands to larger service
My Health to better living
For my club, my community and my country."

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This project was originally prepared by
Vivian Webb, Guelph and updated in 1999 for the Ontario 4-H Council.
Special Thanks to the original Advisory Committee:
Pauline Embury, 4-H Club Leader, Newburg; Kevin Winter, 4-H Member, Vittoria,
and OMAFRA staff.

The Ontario 4-H Council and the Ontario Ministry of Agriculture, Food and Rural Affairs jointly funded this project.

POUL00ME

ISBN 0-7778-8822-X

Welcome!

4-H is a program for youth that also involves adult volunteers, parent/guardians and the community. The aim of 4-H is to develop your skills, knowledge and attitudes in the spirit of fun and friendship. The Ontario 4-H Program values the concept of "learn to do by doing" and will continue to support opportunities for experiential learning.

The program also values and encourages grassroots involvement and shared decision making of all participants.

INTRODUCTION

People have always liked eating eggs and poultry - chicken, turkeys, ducks, geese - and today there are more and more ways you can eat chicken or other poultry. There are chicken fingers, chicken burgers, chicken wieners and duck soup. Eggs don't show up on your table just boiled, poached, scrambled or fried. There are eggs in muffin and cake mixes, custard powders, salad dressings and a lot of other things you will find on grocery shelves.

If you are raising poultry, either for meat or to produce eggs, it is important to know how to produce the best product you can and how to sell it. You will learn some of these things in this 4-H project, which is about breeding and marketing poultry.

Have fun with your project!

OBJECTIVES

1. To find out about the production and marketing of poultry, meat and eggs.

2. To experience the handling and selection of poultry stock.

3. To involve members in planning and running their club, and in developing skills through active participation and leadership.

GENERAL REQUIREMENTS

A member will complete a project satisfactorily by:

1. participating in at least 2/3 of his/her own club meeting time;
2. completing the project requirements to the satisfaction of the club leader(s);
3. taking part in an Achievement Program.

SPECIAL ACTIVITY IDEAS (Optional)

Individual clubs will decide if junior and/or senior members will be required to complete a Special Activity. Here are some suggestions for Special Activities. Encourage the members to display, present or share in some way the results of their activity. This could be done at a club meeting, the Achievement program or another 4-H event.

SENIOR PROJECT IDEAS

1. Prepare a chicken for show and demonstrate showing and handling techniques to your club.

2. Select at least three examples of one the following types: egg type chicken, meat type chicken, turkey, duck or goose. Compare:

i) body weight at same age,
ii) weekly weight gain, and
iii) feed consumption.

Share your findings with club members.

3. Chart the egg production of 10 individual laying hens over a specified period of time. Present your findings at a club meeting. This could be a group activity, with each member charting 10 birds. Comparisons could be made between the different groups of hens and possible reasons discussed for the differences in production.

4. Investigate the use of artificial insemination in the poultry industry. Prepare a report for a club meeting.

5. Build an incubator and display it at one of your meetings.

6. Demonstrate egg candling and prepare a report on its importance to the industry.

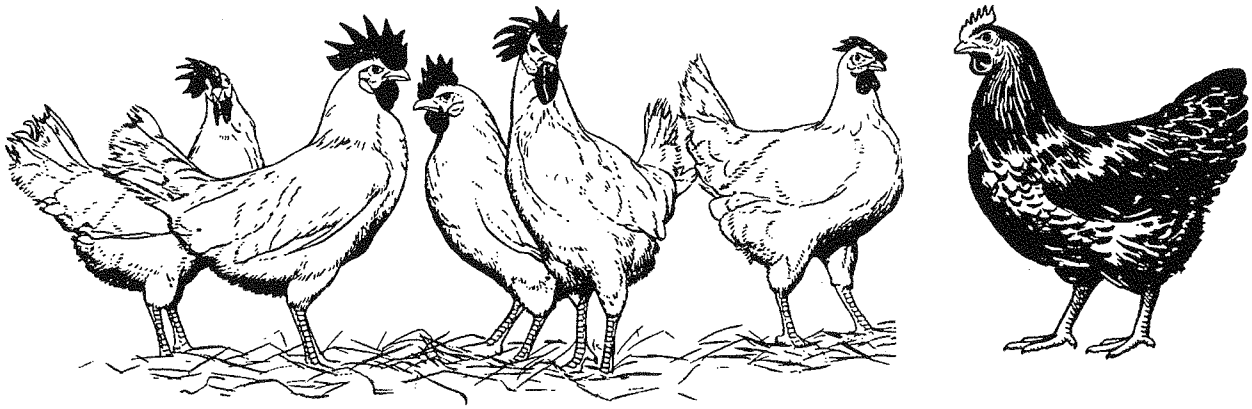
7. You are a TV reporter for Country Canada. Your assignment is to explain to your audience how poultry (choose chicken, turkey, duck or goose) gets from the farm gate to the supermarket. This can be done with slides, a tape recorded presentation or a video. Part of the presentation should show how many different ways the meat is sold in the supermarket. If your project is eggs, you could show muffin or cake mixes, canned custards and other prepared foods. This could be a group project.

8. Prepare a visual display of the history of a breed of show chicken, duck or goose. Discuss what makes it popular and what the ideal of the breed should look like. This could be a group project.

9. Make a presentation on all the stages of a chick's development, from fertilised egg to newly hatched chick.

10. Demonstrate how to bone a chicken, duck, goose or turkey. Once you have boned the bird, name the different parts of the skeleton. Give a recipe for cooking a boned bird.

11. If you have another great idea for an activity, discuss it with your club leaders.



CAUTION!

Farm visitors can spread diseases within a farm and among farms. People spread contaminated material directly on footwear, hands and clothing.

Farm families hosting a 4-H meeting should ask visitors to comply with certain precautions to protect their livestock. These may include the use of a sanitary footbath or wearing plastic disposable boots and clean coveralls. As a courtesy, 4-H members should arrive at the host farm with freshly laundered clothes and clean rubber boots. Upon returning home, 4-H members should change to different clothes and boots before entering their barn.

Remember that some diseases are spread very easily. Animal welfare, pride in stockmanship and peace of mind are reasons to prevent the spread of diseases. The cost associated with a disease outbreak is another.

GET INVOLVED!

Be willing to let your name stand for an executive position. It is a rewarding and fun experience. Following your club's elections, complete this club executive chart.

CLUB EXECUTIVE:

	Name	Phone
PRESIDENT	_____	_____
VICE-PRESIDENT	_____	_____
SECRETARY	_____	_____
TREASURER	_____	_____
PRESS REPORTER	_____	_____
OTHER	_____	_____

CLUB MEMBERSHIP:

Members, Phone	Members, Phone
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Leaders, Phone	Leaders, Phone
_____	_____
_____	_____

OMAFRA Contact, Phone	4-H Association Contact, Phone
_____	_____

MEETING SCHEDULE

	DATE	TIME	PLACE
MEETING ONE			
MEETING TWO			
MEETING THREE			
MEETING FOUR			
MEETING FIVE			
MEETING SIX			
ACHIEVEMENT PROGRAM			

FEEDBACK

The 4-H Resource Development Committee of the Ontario 4-H Council reviews and evaluates 4-H resources. Comments and suggestions about 4-H manuals and guides are always welcome. They may be sent to the following address.

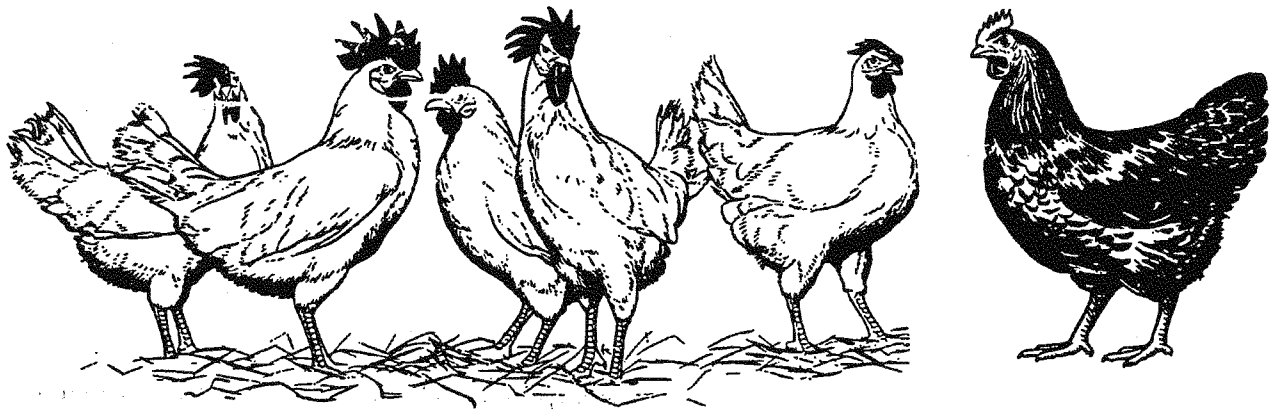
4-H Resource Development Subcommittee
Ontario 4-H Council
RR #1 Thornloe, Ontario P0J 1S0
1-800-937-5161
lduke@ntl.sympatico.ca

Poultry Breeds

ROLL CALL

What do you call a chicken that crosses the road, rolls in the mud and comes back?

****



BREEDS AND VARIETIES

When we talk about poultry, we are talking about all the birds we raise for meat or for eggs. These birds include chickens, turkeys, ducks, geese, quail, pigeons, guinea fowl, partridge and pheasants. During this project, we will be talking mostly about chickens, but most of the information about breeding and marketing is the same for all poultry.

People started raising poultry a long time ago. The first chickens were thin, tough birds called the Jungle Fowl and they lived in Asia more than 5,000 years ago, and may still be found today. Turkeys have been used for food in North and South America as long as people have been here. Ducks were first raised for food in China thousands of years ago. Muscovies, which are a little like ducks, geese and turkeys all mixed together, come from South America. Geese come from Europe and North America.

Today there are lots of different breeds of poultry, each of them raised for a special reason.

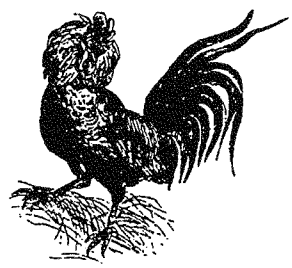
The breeds of chickens we raise to give us meat are usually
- New Hampshire,
- White Plymouth Rock, or
- White Cornish.

Meat birds are sold as broilers, which weigh 2.6 kg (5.5 lbs.) or less, or as roasters, which weigh over 2.6 kg (5.5 lbs.).

Chickens raised to lay eggs are usually
- Single Comb White Leghorn (lays a white egg), or
- Single Comb Rhode Island Red (lays a brown egg).

Some chickens are raised to give both meat and eggs. They are called dual-purpose birds. Some dual-purpose breeds are:
- Barred Plymouth Rock (lays a brown egg),
- Light Sussex (lays a brown egg),
- Single Comb Rhode Island Red (lays a brown egg), or
- Columbian Plymouth Rock (lays a brown egg).

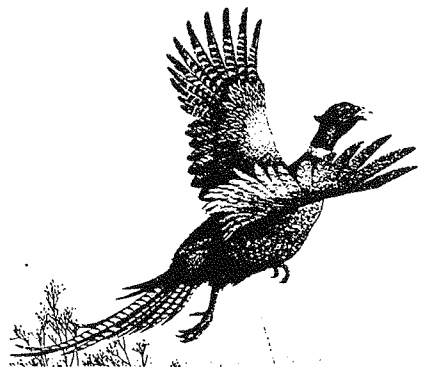
Some chickens are raised mainly for show. Some of the show breeds include:
- Silkies
- Couchons
- Houdans
- Bantams
- Barred Plymouth Rocks
- Rhode Island Reds



Turkeys are usually only raised for meat. The breeds that are usually found on Ontario farms are
- Small Whites, which grow to small birds, or
- Large Whites, which grow larger.

Ducks are usually raised only for their meat, although some people like to eat duck eggs. Muscovies are also only raised for their meat, just like geese, although sometimes geese are raised for their down, which people put in quilts or duvets or pillows.

Game birds like pheasants, partridge, quail and guinea fowl are raised mostly to sell to restaurants and special butcher shops. The most popular game bird raised commercially is the pheasant.



Pigeons are usually raised as a hobby and used for show or for racing.

It is always important when you are choosing your project animals to know clearly why you are raising them. It is to produce meat or eggs? Are you raising your meat birds to be roasters or broilers? Are you raising them as show birds or for some other reason? Once you know what you are going to do, you should be able to choose the right breed right away.

BEFORE THE NEXT MEETING

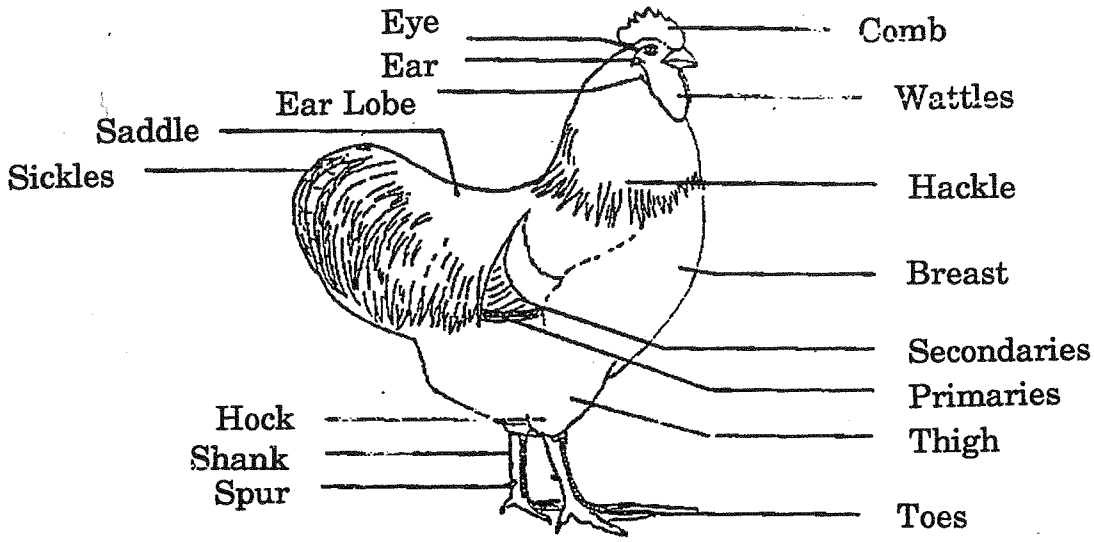
1. If you will be showing either eggs, a poultry bird or a show bird at the Achievement Program. Now is the time to start learning how to present your product and making preparations.

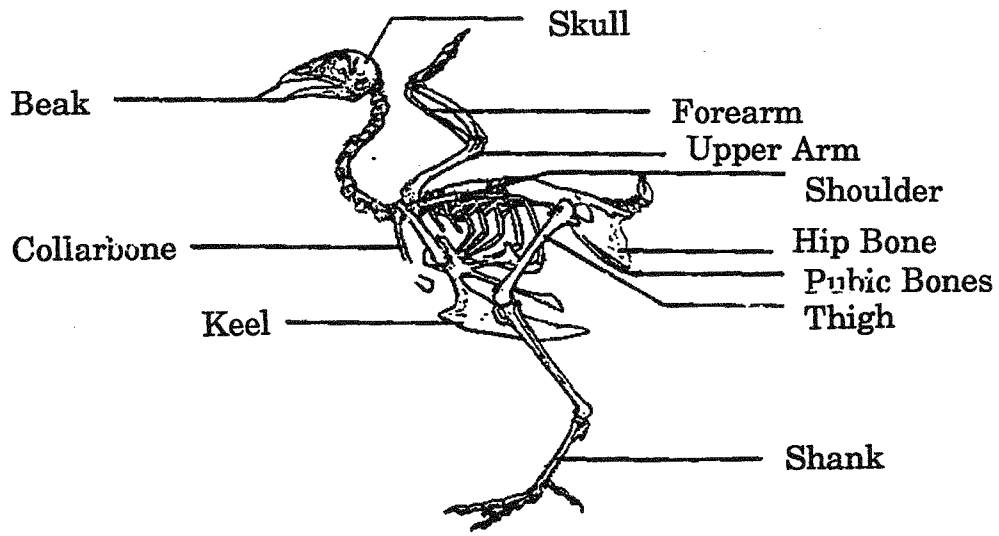
2. Members should choose at least five birds and keep track of how much weight they gain over a two-week period.

3. Senior members should pick a special activity topic and begin to plan how they are going to do it. If you need any help making arrangements, talk to your club leaders.

JUDGE'S CORNER (OPTIONAL)

Before you can judge any animal properly, you have to know what to call the different parts of the animal. Here are two views of a chicken, inside and out.


Eye
Ear
Ear Lobe
Saddle
Sickles
Comb
Wattles
Hackle
Breast
Secondaries
Primaries
Thigh
Toes
Hock
Shank
Spur


Skull
Beak
Forearm
Upper Arm
Shoulder
Collarbone
Hip Bone
Pubic Bones
Thigh
Keel
Shank

Making The Right Choice

ROLL CALL

Where does a duck go when it's sick?

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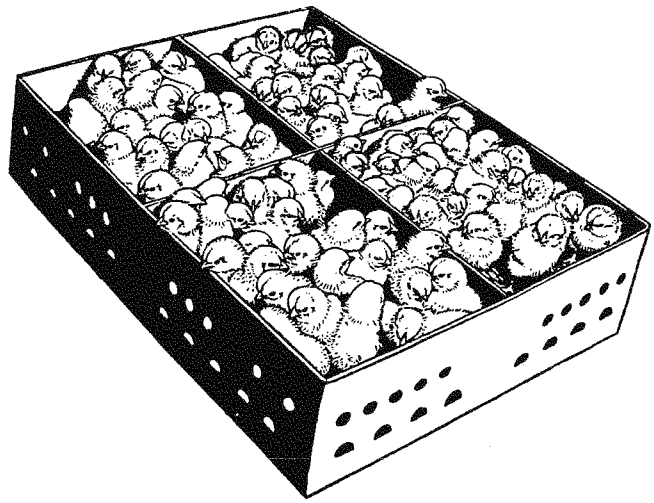
CHOOSING THE RIGHT BIRDS



You only want the best birds for your flock, whether you're producing layers, meat birds or show poultry. Getting the best means knowing how to choose the right birds at the beginning.

You can either raise the birds yourself, right from the egg or by buying day-old pullets. You can also buy ready-to-lay pullets who are 18-19 weeks old and have been vaccinated. Hens usually start to lay when they are between 20 and 24 weeks old, depending on the breed and how they have been raised.

Day-old pullets should be raised in separate facilities from mature birds. If they are not kept separate, the older birds will bully the younger birds and may even kill them. They could also catch diseases from the older birds.

If you are buying either day-olds or ready-to-lay, make sure you deal with a reputable commercial pullet grower. Make sure the chicks you buy are active and look healthy.

If you are raising layers, you want birds with small bodies, that don't need a lot of feed to produce eggs and don't get sick. Of course, you also want them to produce a lot of eggs. These eggs should be good quality both inside and out, large, have strong shells and be all the same colour.

If you are raising meat chickens, you want them to have white plumage, yellow skin, large bodies and a reasonable egg production. You also want them to grow fast when they are young and get feathers early. You don't want chickens that get sick or who need a lot of feed to grow properly.

If you are raising poultry for show, choose birds with the right colour markings and plumage for the breed, good feather quality and good shape, size and colour of comb, wattles and ear lobes. You have to be on the lookout for defects in your birds, such as breast blisters, abnormal flight feathers and crooked feet. Don't choose a bird that looks wrong for your breed or one that has something obviously wrong with it. Make sure your bird looks healthy and is active, too. It will help when it comes time for the judging!

HANDLE WITH CARE

It is very important to know the proper way to handle a bird. Both you and the bird should feel safe and comfortable and nobody should get hurt. Here's the right way to pick up a bird.

1. Pick the bird up by the hocks, being careful not to hurt the legs.
2. Caged birds should be removed from the cage both feet first. They should never be handled by the head, neck, or by one wing alone.
3. Hold the bird gently by the wings.
4. Slide your hand under the bird, with your index finger between the legs. Hold the legs of the bird close to the body so it won't flutter.
5. The keel bone of the bird will rest on the palm of your hand. This keeps the bird balanced.
6. If you are going to be holding the bird for a long time, hold it by its hocks and tuck it under your arm, close to your body.
7. When you are returning a bird to its cage, put it in head first.

A BIRD IN THE HAND

When you have picked up a hen, take a good, close look at it. There are several things you will notice that will tell you if it is a good layer.

A good layer has a large, moist vent and a soft abdomen. There is also a greater distance between the end of the keel and the pubic bones.

Checking vent

Measuring distance between pubic bones, three fingers

Measuring distance between keel and pubic bones, four fingers

A non-laying hen will have a small, dry vent and a tough, leathery abdomen. There will be less distance between the end of the keel and the pubic bones.

In every flock there are a few birds that do not lay as well as the others or grow as well. Sometimes these birds are culled, which means they are killed and used for meat. It is illegal in Ontario to sell these chickens without quota.

HOW DO YOU SAY...

It helps if everyone uses the same words to describe a chicken. Here are some words that people usually use.

Vent - thin, flat, smooth, coarse, round
Abdomen - full, soft, pliable, thick, hard, fatty
Distance between keel and pubic bones - good, fair, poor
Spread of pubic bones - wide apart, close together, fair width
Condition of pubic bones - sharp, thin, round, well-fleshed.

BEFORE THE NEXT MEETING

Make a rough sketch of the area where you keep your poultry. Be sure to include the source of heat, water and feeding stations, doors and windows. Also include approximate measurements of the area.

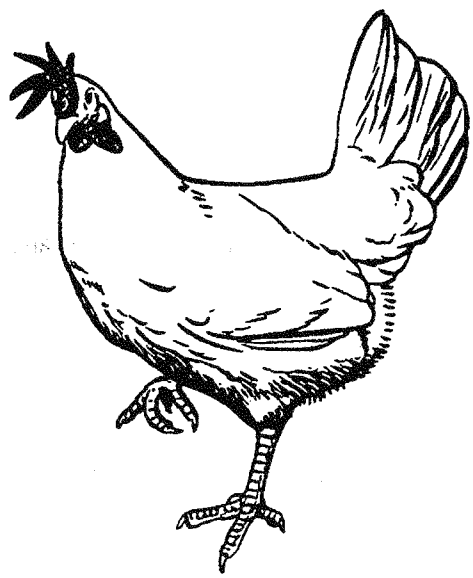
JUDGE'S CORNER

Judging is really a comparison of animals in a group. This group may be as small as two or as large as 40 animals but in 4-H we are usually comparing four animals.

Before judging you must first have a picture in your mind of the ideal type of the animal or product that you are judging. The ideal type of animal will be the most economical to raise and will also provide the best chance for profit. The ideal egg will be the most appealing to the consumer, whether it is a processor or a regular shopper.

To get used to the idea of what an "ideal" looks like, we can start with something as simple as a pencil. First you have to decide how the perfect pencil would look. Does the colour matter? What about the hardness of the lead? Is it short or long? Does it need an eraser? Should it be round or have edges?

Now that you have decided what makes the perfect pencil, put a couple of pencils in front of you. Which pencil is closest to your "ideal" pencil?



Incubation And Brooding

ROLL CALL

What do you get when you cross a duck with a cow?

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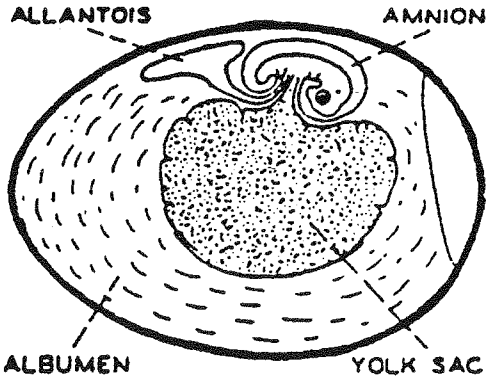
WHAT GOES ON INSIDE

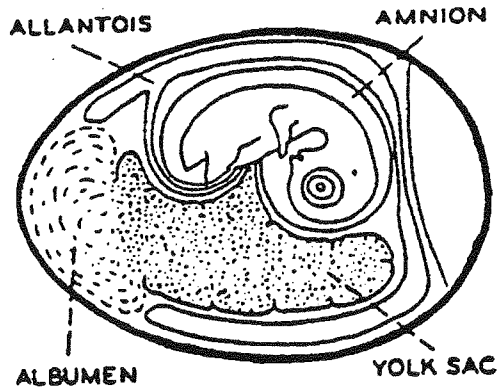
A chick grows inside an egg basically the same way a gosling or duckling does. And it doesn't matter if the egg is hatched naturally or in an incubator.

HOW A CHICK DEVELOPS

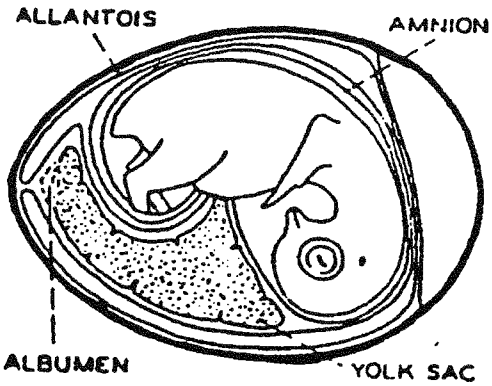
Before egg-laying	Fertilization Division and growth of living cells
Between laying and incubation	No growth
During incubation: Day One	Head and eyes start to form
Day Two	Heart starts to form
Day Three	Amnion, nose, legs, wings and allantois start to form
Day Five	Sex organs start to appear
Day Six	Beak and egg-tooth start to form
Day Eight	Feathers start to show
Day Sixteen	Scales, claws and beak are becoming firm and horny
Day Seventeen	Beak turns toward air cell
Day Nineteen	Yolk sac begins to enter body cavity
Day Twenty	Yolk sac completely drawn into body cavity Embryo takes up practically all the space within the egg except the air cell
Day Twenty-one	Chick hatches



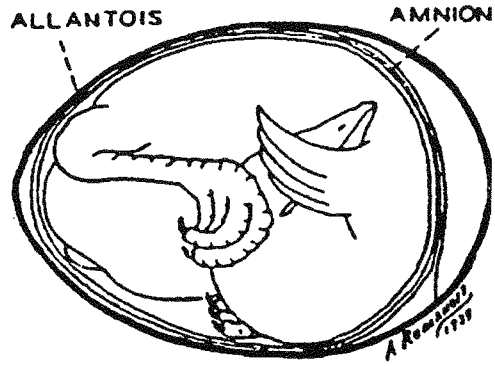
5 DAYS



10 DAYS



15 DAYS



20 DAYS

CANDLING EGGS

Eggs for table use are candled to see the condition of the air cell, the yolk, albumen, blood spots or meat spots. Candling is done in a dark room with the egg held in front of a strong light that lets you see the inside of the egg.

Candling is also used to see if the eggs are fertilized and, if they are, to check how the embryo is growing.

White eggs should be tested for fertilization on the third day. Brown eggs should be checked on the fifth or sixth day because it is difficult to see the embryo clearly before this.

If an egg has been fertilized, you will be able to see a small, reddish area with blood vessels running away from it. It looks like a huge red spider. This is the embryo floating around inside the egg.

If the embryo dies, the blood vessels break away and form a blood ring. All clear eggs and eggs showing blood rings or streaks should be removed from the incubator.

HOW TO MAKE A SIMPLE CANDLER

You will need:

A large shoebox or something like it
A powerful flashlight
Masking tape
A sharp knife or pair of scissors

1. Cut two holes in the shoebox, one the size of your flashlight head on the side of the box and one about 1 inch in diameter on the bottom of the box about in the middle.
2. Tape the flashlight to the box and you're ready to go.

HATCHING THE EGG

It takes some poultry eggs longer to hatch than others do. For example, a chicken egg spends 21 days in the incubator before it hatches. A turkey or duck egg is there for 28 days, while a goose egg takes 30 to 31 days. A Muscovy egg stays in the incubator the longest. It's there for 35 days before it hatches.

There are two ways to incubate an egg, with a broody hen or in an incubator.

DOING WHAT COMES NATURALLY

When a hen lays eggs that are going to hatch chicks, she becomes broody. You can tell if a hen is broody if she stops laying eggs and always ruffles her feathers and clucks whenever someone comes near.

A broody chicken usually looks after 10 or 12 eggs, which is called a setting.

Once a hen starts incubating her eggs she only leaves the nest for food and water. If you are looking after a broody hen, you should make sure that she gets hard grain along with some grit in her food. She will also need a lot of fresh water, which should be available all the time.

INCUBATORS

Incubators are heated containers that are used to hatch eggs. The temperature inside an incubator should stay at 38°C. A big hatchery can have between 14,000 and 100,000 eggs in incubators and there are even hatcheries that hatch 1 million eggs at a time! Hatcheries that are this size use mechanized incubators but you can hatch eggs just as well in a small incubator.

There are two kinds of incubators used in commercial hatcheries: forced air setters and hatchers.

SETTERS

Eggs are put into a setter until three days before they are supposed to hatch. While they are in the setter, the eggs are put into trays or flats, with the large end of the egg up, and are turned over every hour.

HATCHERS

Three days before the eggs are supposed to hatch they are moved to the hatcher. The eggs are set on their sides and left until the chicks hatch.

KEEPING THE EGG HEALTHY

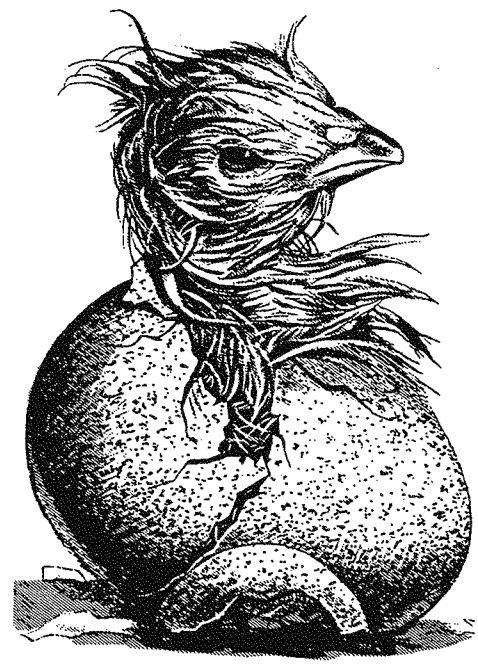
When you are incubating eggs, you have to

- keep the egg warm so the chick, or embryo, inside will grow
- keep the air inside the incubator moist or humid
- have good air ventilation inside the incubator but don't have it drafty
- turn the eggs regularly. This stops the chick from sticking to the shell. In a small incubator the eggs should be turned at least four times daily. In large setters the trays of eggs are usually automatically turned every hour. The eggs should not be turned during the hatching period.

BREAKING OUT

On the 20th day of incubation the chick pushes its head forward and breaks the shell membrane with its egg tooth, on the beak. The chick then starts to breathe the air in the air cell. This takes a whole day.

On the 21st day the chick breaks out of its shell by using its beak to chip out of the egg shell.



BROODING

Brooding is the early period of growth during a young bird's life when it is unable to maintain its body temperature without some outside source of heat. At this stage you have to give your birds good housing, good feed, clean water, good care and a clean place to live.

PREPARING THE BROODER HOUSE

Clean and disinfect the brooder house at least four weeks before you bring in the day-old birds. A good washing and disinfecting will kill most of the disease-producing organisms. If you leave the pen empty after clean up, this will break the life cycle of other harmful bacteria or parasites.

A few days before the birds arrive; the floor of the brooder should be covered with 5 to 10 cm of litter material. This is usually soft wood shavings or chopped straw. Litter or bedding will absorb moisture and keep the floor warm.

About a day before the birds arrive, you should turn the heat lamp on and bring pen temperature to 32°C at bird level, and maintain this temperature for the first few days.

There are many kinds of brooders on the market today that use oil, gas, propane or electricity. Most small poultry brooding operations use electricity. One 250-watt infra red bulb is adequate as a source of heat for 50 chicks or poults. There is even an energy-efficient brooder lamp on the market now.

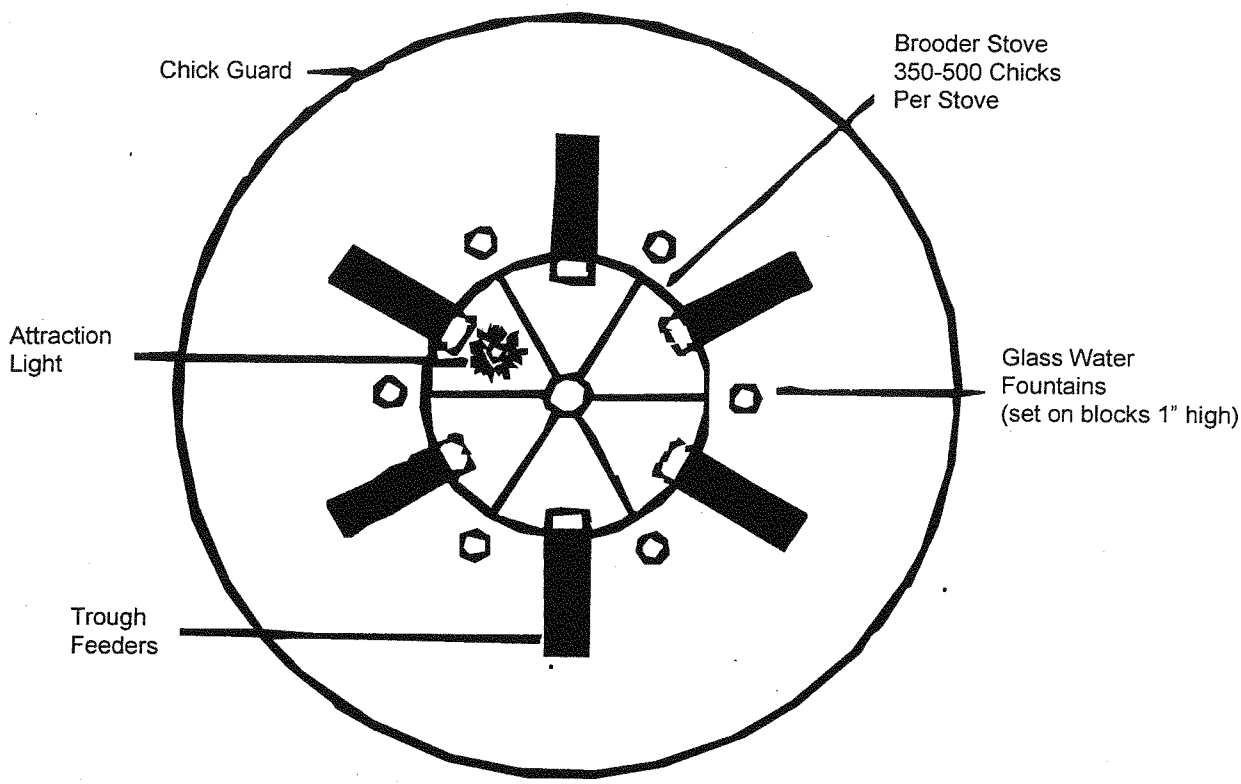
HOW TO SET UP YOUR BROODER HOUSE

A guard should be used to keep the day-old birds near the brooder. The guard is usually made of cardboard and is about 45 cm high.

The feeders and waterers should be put near the lamp so that the birds don't have to go far for their daily feed.

Fill the feeders and waterers several hours before the birds arrive. The water should be at room temperature to encourage them to drink. One way to get birds to eat in a new brooder pen is to put a little bit of feed either on new egg flats or on inverted chick box lids. Day-olds will peck at anything at the same level as the surface on which they are standing.

BROODING EQUIPMENT



BROODER MANAGEMENT

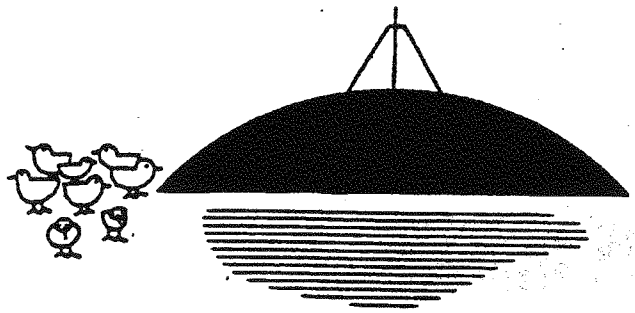
Keeping the birds healthy when they are in the brooder will give you good meat and egg production as well as good-looking birds. Birds that become unthrifty because of poor care during the brooding stage will not recover later on, and do not perform well.

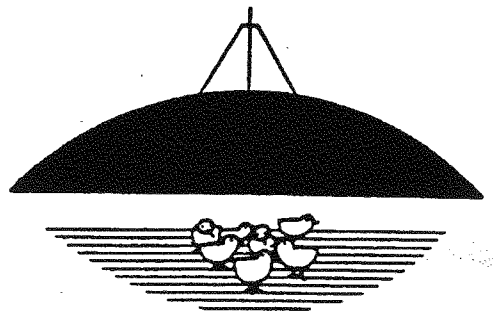
TEMPERATURE

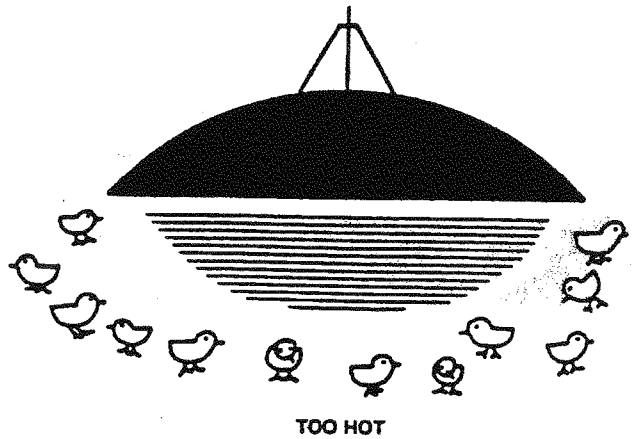
When day-olds are first brought into the brooder house the temperature under the heat lamp should be about 34°C for the first few days. After this you can lower the temperature about 3°C a week until the temperature under the lamp is the same as the temperature in the pen. Pen temperatures from 18°C to 24°C are comfortable for most poultry stock.

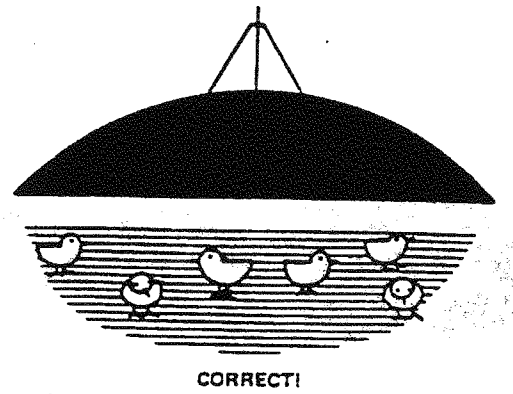
You should watch your birds to figure out if it's too hot, too cold or too drafty under the lamp. If they huddle close to the lamp, you can be sure they're too cold. If, on the other hand, they are as far away from the lamp as possible, then the temperature is too high.

See the diagram on the following page to observe chick behavior to heat.









FLOOR SPACE

Poultry grows very fast, so it is easy for the pen to become overcrowded. Here's how you can figure out how much floor space you should allow for each bird in your flock.

	Chickens	Turkeys	Ducks	Geese
0-4 weeks	0.045 m^2	0.06 m^2	0.06 m^2	0.10 m^2
8 weeks	0.09 m^2	0.12 m^2	0.12 m^2	0.25 m^2

It is also very important to keep the litter in the pen clean. If the litter gets too wet, your poultry will probably get sick. Good insulation and ventilation of the brooder house and no overcrowding will help you keep your litter clean.

LIGHTS

For the first two days the birds are in the brooder the lights should be on all the time. You should be able to read a newspaper easily with all the lights on. Having the lights on helps the birds find the feed and water. When they figure out where everything is, the lights only have to be on for 8 hours a day and they don't have to be so bright.

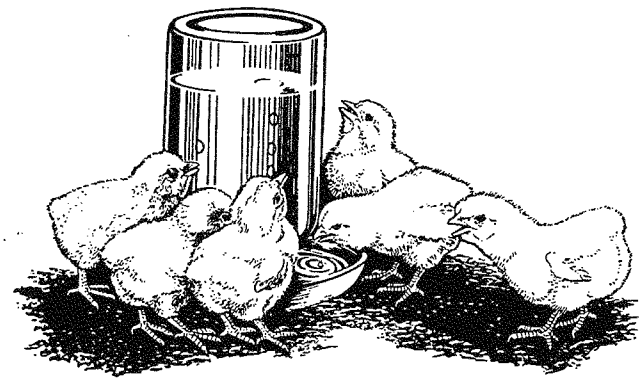
WATER

Fresh clean water is very important in keeping the young birds healthy during the brooding period. Waterers should be put throughout the brooding space.

For every 100 chicks you will need:

0-1 week	- 6-1 litre jars
1-4 weeks	- 2-8 litre jars
4-8 weeks	- 2-20 litre jars

When day-old birds are put in the brooder house, make sure that they find the waterers. The bubbling of the water in glass jars attracts young birds. Coloured marbles placed in waterers sparkle and also may Attract the chicks to the water. Automatic waterers can be used after the first week, allowing about 1 cm of watering space per chick.



Waterers should be cleaned with a scrub brush every day and the old water should be discarded. The waterers should then be disinfected to prevent growth of bacteria.

FEED

A 20-22% protein starter mash or crumbles should be fed for the first four weeks. Crumbles are pellets that have been crumbled into smaller particles.

The young birds should have feed at all times. Feed should be fresh so feed in small quantities and often the first few days.

Each chick should have 5 cm of trough feeder space. Troughs should be as high as a bird's back or maybe a little higher.

In most cases, a gradual switch is made after four weeks to a 16-18% grower feed.

BEFORE THE NEXT MEETING

1. Look through your kitchen or the grocery store and find three products that contain eggs. (A carton of eggs doesn't count.)

JUDGE'S CORNER (OPTIONAL)

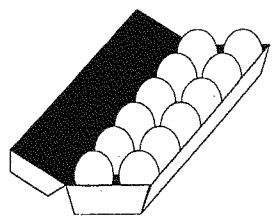
Here is a chance for you to practice your judging skills on some eggs. If you are new to judging, only look at two or three of the categories such as shape, shell quality and yolk.

EGG JUDGING SCORECARD

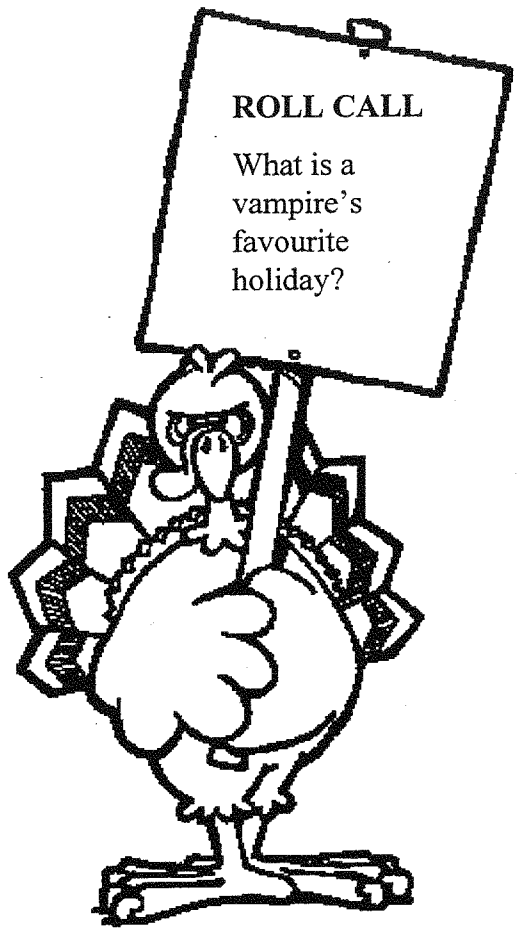
		PERFECT SCORE
Shell		
1.	Shape: perfect elliptical egg shape, no bumps or ridges.	10
2.	Shell Quality: smooth, fine textured shell wall, thick not thin or opaque, spotty patches when held to a candling light.	10
3.	Cleanliness: no visible dirt, spots or stains.	15
4.	No cracks.	15
5.	Egg size in sample: even, all the same grade size, no eggs of foreign sizes.	10
Yolk		
1.	Yolk: round, yellow-orange, well centred, stands up well.	10
2.	No blood spots or meat chunks visible on opening or candling of the eggs.	10
Albumen		
1.	Albumen: should be reasonably firm and should not run all over when the egg is opened.	10
Air Cell		
1.	Freshness: air cell should not be more than 3 cm deep.	10
	TOTAL SCORE	___ / 100

Judges may also make note of:
Number of eggs with cracks: _____

Number of eggs with blood spots or meat chunks: _____



Making The Grade



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MARKETING BOARDS

In Ontario there are marketing boards that are responsible for marketing poultry and eggs. They are:

- The Chicken Farmers of Ontario was set up in 1965 and negotiates quantity and price with Ontario's chicken processors. Check our their Web site at **http://www.cfo.on.ca**
- The Ontario Turkey Producers' Marketing Board, set up in 1973 to market all turkeys (broilers and heavies) They have a Web site at **http://www.ont-turkey.on.ca/main.htm**
- The Ontario Broiler Hatching Egg and Chick Commission, established in 1983, representing the interests of businesses involved in supplying day-old chicks to growers of chicken meat, and
- The Ontario Egg Producers' were established in 1973, to devise a marketing plan for eggs. It is a member of the Canadian Egg Marketing Agency (CEMA).

The Chicken Farmers of Ontario is a member of the national Chicken Farmers of Canada (CFC) and the Turkey Producers' Marketing Board is a member of the Canadian Turkey Marketing Agency (CTMA). The Ontario Broiler Hatching Egg and Chick Commission is also a member of a national agency, the Canadian Broiler Hatching Egg Marketing Agency.

The provincial marketing boards:

- help producers market their products;
- keep standards of quality high;
- negotiate live price with the processors; and
- encourage people to eat more poultry and eggs by advertising these products.

The national marketing agencies:

- decide how much poultry or eggs each province can produce;
- make sure products are high quality; and
- encourage people to eat more poultry and eggs by advertising these products.

A LICENCE TO PRODUCE

Every year, each of the national marketing agencies tells the provincial marketing boards how many chickens or eggs each province can produce. It is then up to the provinces to tell all the producers how many chickens or eggs each one can produce. This is called quota allocation. Producers in Ontario may keep up to 99 laying birds without having quota.

The national marketing agencies only want to produce as much poultry and eggs as they can sell at a good price and which supply domestic markets.

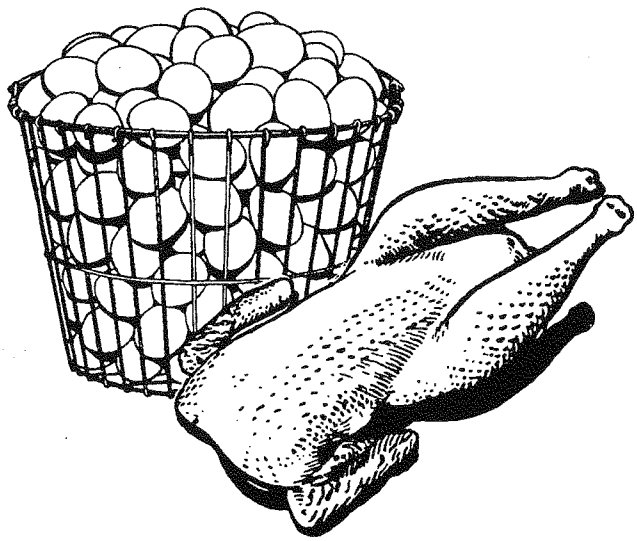
Fixed Costs: These are costs that the producer has to pay no matter how many birds he/she has, such as the cost of the barn and land, and

Variable Costs: These are costs that change, depending on how many birds the producer keeps. These could be things like feed and electricity.

There is also a sum of money added to the fixed and variable costs to pay for the cost of running the farm and selling the products.

MAKING THE GRADE

When poultry meat is being graded, the look of the carcass or dressed bird is very important. When you see a chicken, turkey or duck that is marked "Canada Grade A" you are seeing a bird that is not only tasty, but one that looks good too.



A Canada Grade A bird is close to "perfect" in appearance. All the parts are there. The breasts are plump and there is a bit of fat at the base of the neck, all the way to the wishbone. There may be a little bit of fat over the breast and thighs.

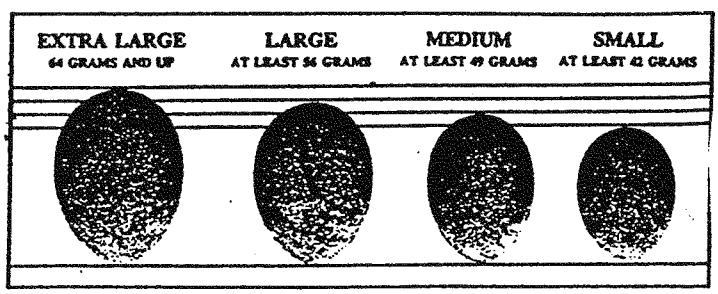
The other grades of chicken include Canada B, Canada Utility, Canada C and Canada Canner. Even though a chicken may be graded one of these grades, it is still nutritious food. There may be a wing or drumstick missing or the keelbone may be crooked and it just doesn't look as good as a Canada Grade A bird. As a rule, the only grades of chicken or turkey you will see in a supermarket are Canada Grade A and Utility Grade.

When eggs are graded you have to look at the

Shell quality: the shape of the egg, the strength of the egg shell and how clean it is.

Weight: egg sizes (ex: Extra Large, Large, Pee Wee) are based on how much an egg weighs.

Interior quality: when you candle an egg you are checking the position and shape of the yolk and its shadow, the size of the air cell and whether or not there are any bloodspots.



There are two markets for eggs:

1. The table market - eggs bought by consumers in stores and restaurants.
2. The breaker market - eggs bought by processors to make products such as mayonnaise, cake mixes, noodles and salad dressings.

Ninety percent of the eggs produced in Ontario are sold directly to consumers. The number of eggs sold for the table market is highest at the end of the year and at Easter. Demand for table eggs is lowest in January, February and during the summer.

FANCY POULTRY

There are marketing boards only for chicken, turkey and their eggs. Producers of pheasants, ducks, quail and other specialty poultry have to sell these products themselves. But there are customers out there!

For example, if you are raising good purebred stock of any poultry, including chickens, other 4-H members or producers might be interested in your hatching eggs. Advertising in places such as club newsletters and breed club newsletters spreads the word that you have stock available. Showing at fairs, club shows and breed shows also lets people know what you have to sell.

Many people who keep fowl with barred or multicoloured feathers have found markets for those feathers at sport shops. Fishermen like them for making fishing flies.

When you are raising a special product, you have to spend time to find that special consumer! It takes a lot of imagination and clever promotion to tell the right people that you have the product they want to buy.

BEFORE THE NEXT MEETING

1. Find an advertisement for a food product in any magazine or newspaper. Remember to bring it to the next meeting.

JUDGE'S CORNER (OPTIONAL)

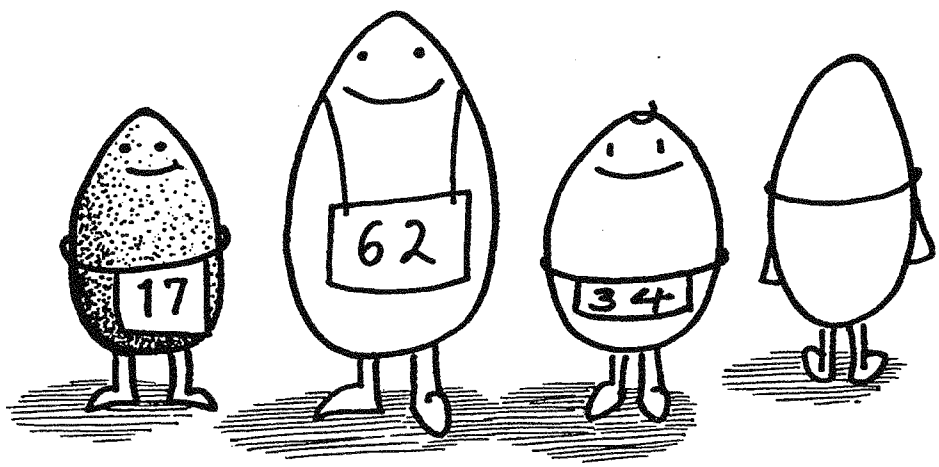
You are part of a team that is going to judge four eggs. There are four steps in judging a class. They are:

1. Picture the "ideal" egg in your mind. Each object will be compared to your "ideal" as well as each other when you begin placing.

2. Look at each egg quickly first. Now look at each egg carefully. A rule of thumb in judging is that your first impression is often correct, since you have mentally compared the animal to your "ideal." The second, more careful look, is supposed to pick out anything you missed the first time.

3. Compare the egg you are looking at to the picture in your mind of the ideal egg. Also compare the eggs to one another. Some characteristics are more important than others.

1. Decide on your placings. Put the eggs in order, using their assigned numbers, e.g. 2, 4, 3, 1. In this case, 2 would be your first choice.



To Market, To Market

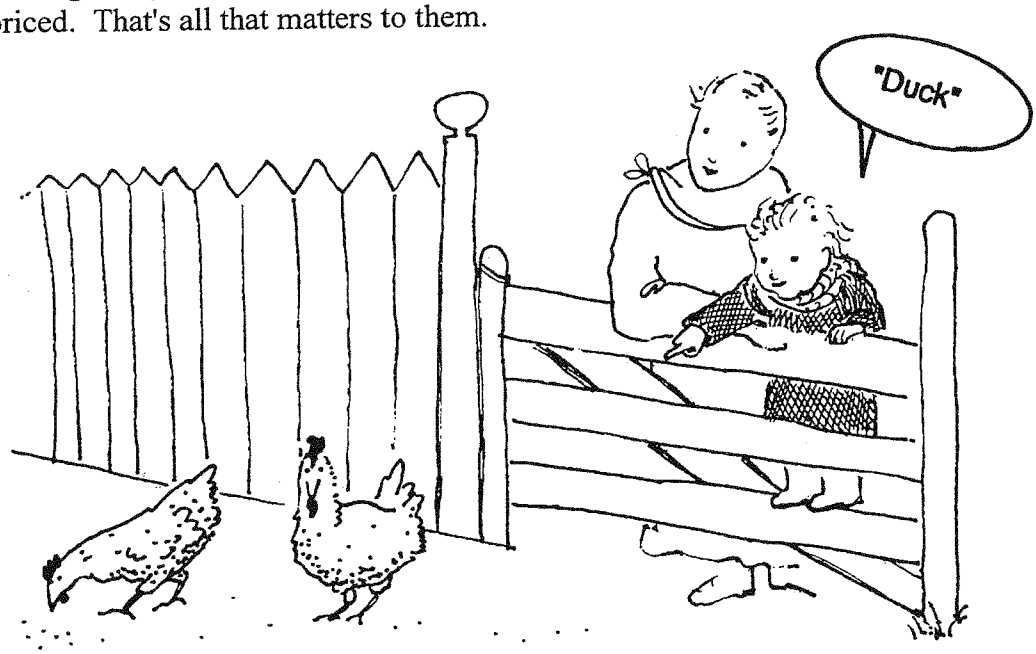
ROLL CALL

Why did the farmer scold the chicken?

****

MAKING THE SALE

Most consumers don't know how their poultry or eggs are raised or how they get to market. Consumers go to the grocery store expecting to find poultry and egg products that taste good and are reasonably priced. That's all that matters to them.



But producers have to understand how to raise good quality poultry and eggs and make a profit for their businesses. They also have to understand how to sell their poultry and eggs to the consumer.

Today people are buying a lot of foods that they only have to warm up in the oven or the microwave. These are called "convenience foods" because they are easy to prepare, or convenient.

A lot of people like to eat chicken because they believe it contains less fat than red meat.

Poultry isn't just eaten roasted on Sunday. People can buy frozen chicken pot pies, chicken fingers, chicken nuggets, chicken burgers, chicken wieners, chicken cacciatore and lot of other chicken dishes. They can also buy frozen Cornish hens, tinned duck, goose and duck pate, pre-basted or stuffed turkeys and many other specialty items.

Pate: made from ground meat and seasonings. It is usually served on crackers as a snack, or before a meal.

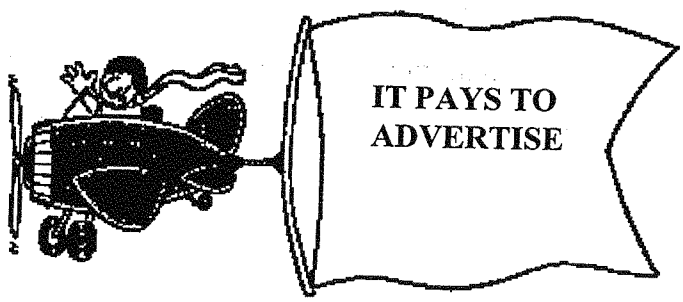
Eggs show up on peoples' tables poached, boiled, scrambled or fried. But they're also in microwaveable breakfasts, muffin and cake mixes, pasta, eggnog, custard powders, puddings, salad dressings, ice cream, frozen pies and cakes and lots of other tasty things.

ON THE WAY TO MARKET

Producers don't take their poultry or eggs to the grocery store themselves. They take them to a processor. A poultry processor kills the birds, cleans the carcasses and prepares them for sale to grocery stores, restaurants, hotels and institutions like hospitals.

But wait, there's more. This processor can also sell the birds to a further processor, who turns the poultry into other food items like chicken wieners or nuggets and burgers.

About 20 percent of the eggs produced in Ontario are for industrial use. That means that they go into cake mixes, noodles and other products. Processors make these foods, too.



People buy certain foods for a lot of different reasons:

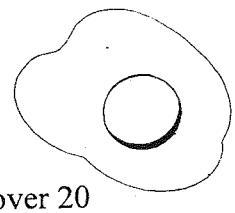
- the food tastes good
- the cost of the food is reasonable
- they are on a special diet
- the food tastes like food Mom cooked when they were little
- they want to try something different
- someone told them it was a good product to buy

Advertising tries to convince people to buy a certain product. Advertising tries to convince buyers that a certain product:

- tastes good
- is good for people on special diets
- is good value for its price
- tastes just like something Mom cooked when you were little
- it's different
- that famous or beautiful people, or people just like you eat this food all the time.

How do food manufacturers advertise?

Before food manufacturers can decide on the best way to advertise their product, they have to figure out what kind of person is most likely to buy it. If it is a very special product, such as an expensive duck pate, they shouldn't target the advertising to kids, who are unlikely to purchase or consume it. Instead, they should advertise it in specialty grocery stores or in gourmet magazines. Teenagers would probably pay more attention to advertising about chicken fingers.



"GET CRACKING"

In 1979, the Ontario Egg Producers' Marketing Board decided it should tell people to "Get Cracking". The number of eggs eaten in Ontario had been falling a little bit each year for over 20 years before the campaign began. But the "Get Cracking" campaign, with television and magazine ads and posters, changed all that. There was even an ad campaign especially aimed at kids, called "Give an Egg a Break." Since 1979, the number of eggs eaten in Ontario has risen slightly instead of falling.

PAST THE FARM GATE

A poultry or egg producer has to know what's going on past the farm gate. A producer has to know what consumers and processors want if he/she is going to sell his/her product. And knowing about marketing will make him/her better at selling his own products.

Here's a chance for you to show how much you know about selling. You'll have to decide how to sell one of these two new products: chicken chili or a toasted western sandwich.

The chicken chili is made with ground chicken, plum tomatoes, tomato sauce, red and white kidney beans, onions, vinegar, chili powder, garlic, salt and pepper. It's up to you to decide how you are going to package this new product, for example, it could be frozen or canned.

The toasted western sandwich is made with eggs, ham, onions, green pepper, green onions, butter, salt and pepper. It's up to you whether it comes on brown bread or white bread or on something else, like a bun. This item is sold frozen. (The ingredients present in the greatest quantity will be listed first; the ingredients present in the smallest amount will be last.)

MARKETING STRATEGY FOR GOODFOODS LTD.

What is the product? _____

What should we call it? _____

Ingredients _____

_____

_____

Where do the ingredients come from? _____

_____

_____

What should the package be like? _____

_____

(You can draw the package here.)

How could you prepare this product?

____ Bake

____ Boil

____ Microwave

____ Other _____

What is special about this product? _____

_____

_____

Who will buy this product?_____

_____

_____

_____

How often would they buy this product?

_____ Every week

_____ Once a month

____ Twice a month

____ Other _____

How should we advertise this product?_____

_____

_____

_____

(You can show how you plan to advertise your product here.)

BEFORE THE NEXT MEETING

Which processed chicken and egg products do you use in your home? Why do you use them? For the taste, cost, convenience? How much does marketing affect the foods used in your home?

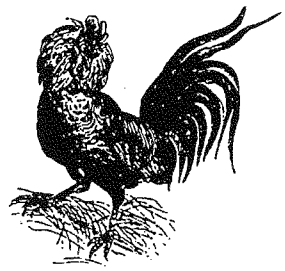
JUDGE'S CORNER (OPTIONAL)

You have learned some of the basic things to look for when you judge something. Now you must learn how to tell someone why you picked one competitor over another. Here are some tips on giving reasons.

1. Reasons should be concise, clear and convincing. They should take no more than two minutes to present.
2. Stand up and look directly at the person to whom you are speaking.
3. Begin by naming the class and making a definite statement on how you placed the animals or product.
4. Explain why you placed the first over the second, the second over the third and the third over the last.
5. Never go back. Say all you intend to say about one placing, then go on to the next.
6. Carry a clear mental picture of the class in your mind.
7. Talk about just the most important points of each exhibit.
8. Do not use the terms "better" or "good". Be more specific.
9. Do not criticize the bottom placing too much, even though it may be poor. Give two or three main criticisms and then stop.
10. Speak loudly enough for the judge to hear you. Be confident!
11. Vary the tone of your voice. Emphasize your main points.
12. Have confidence in your placings.
13. Understand the meaning of all the proper terms and don't get stuck using just a few of them.
14. Always do your best and have no regrets. Remember that you can always do better the next time!

You can look in your 4-H Judging Handbook for the proper format for giving reasons. If you don't have one, ask your leader to contact his/her 4-H contact at OMAFRA.

GLOSSARY



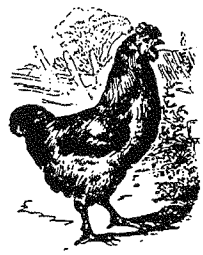
COMMON POULTRY WORDS

Abdomen - area between the keel and pubic bones

Barring - alternate strips of light and dark across a feather

Beak - upper and lower parts of the mouth of chickens, turkey, etc.

Beard - growth or wiry hairs on the front portion of the breast of a male turkey



Bill - upper and lower parts of the mouth of waterfowl

Breast - the forward part of the body between the neck and the keel bone

Breed - a group of fowl related by ancestry and breeding true to certain characteristics such as body shape and size

Broiler - usually a young chicken 6 to 7 weeks of age or sometimes a young turkey 8 to 10 weeks old processed for meat

Broody - maternal instinct causing the female to want to hatch eggs

Capon - a male chicken (with testicles removed) grown for meat

Class - the specified geographic area from which certain breeds of chicken originated. For example, the White Leghorn belongs to the Mediterranean Class.

Cockerel - a male chicken less than 5 months of age

Comb - the fleshy part on top of the head of chickens, usually a reddish colour

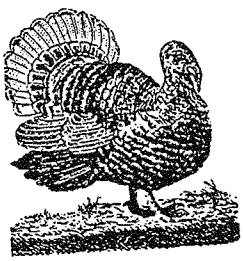
Down - the soft, fine, fluffy covering of young birds. Down feathers may also be present on adult birds.

Drake - a male duck

Duck - female duck as distinguished from the drake

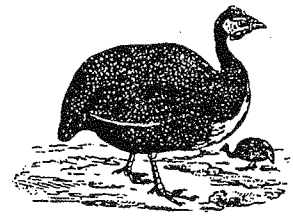
Duckling - young duck of either sex

Finish - relates to the meat quality of a dressed or eviscerated bird. A dressed bird is a slaughtered bird with feathers removed. An eviscerated bird is a slaughtered bird with feather, head, feet and inner organs (viscera) removed.



Fleshing - the meatiness of a bird, the ratio of meat to bone

Gander	- male goose
Germ	- developing embryo inside an egg
Goose	- female goose as distinguished from the gander
Gosling	- young goose of either sex
Hackle	- plumage on side and rear of the neck
Hen	- a female chicken more than 19 weeks old
Hock	- the joint of the leg between the lower thigh and the shank
Keel	- the breast bone
Keet	- a young guinea fowl
Molt	- to shed old feathers and grow new ones
Oil sac	- large oil gland (preen gland) on the base of the tail used to preen or condition the feathers
Pipping	- what a chick does as it breaks through the shell to hatch
Poult	- a young turkey
Primaries	- the long, stiff flight feathers on the outermost half of the wing
Pubic Bone	- thin posterior portion of the hip bones that forms part of the pelvis
Pullet	- female chicken less than 19 weeks old
Roaster	- chickens of either sex, older than 18 weeks of age, grown for a large meat bird
Saddle	- the upper back portion of the bird, just before the tail section
Secondaries	- the large wing feathers adjacent to the body
Shank	- the leg portion from the toes to the hocks
Sickles	- the long, curved tail feathers of the rooster
Spur	- the stiff, horny growth on the inside of the shank of older poultry, more pronounced in males
Thighs	- the feathered parts of the legs between the hock and where the leg joins with the body
Tom	- a male turkey
Variety	- subdivision of a breed distinguished either by plumage colour, plumage pattern or comb type
Vent	- excretory or fecal opening at the tail area of birds
Wattles	- the thin, fleshy skin at either side of the base of the beak and upper throat
Web Foot	- thin, rubbery layer of skin between the toes of waterfowl



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Fitting and Showing Your Poultry Products

EGGS-ACTLY RIGHT

Producing eggs for show begins a long time before show day. First you have to decide whether you want brown eggs or white eggs. Then you have to decide how many pullets you will need for your project.

Older hens produce larger eggs, but the shells are thinner and they may have bumps and ridges on them. These things would make your egg less attractive to the judges. If, for example, you will be showing your eggs in mid-September, you must begin at least eight months ahead if you are going to raise your laying hens from chicks.

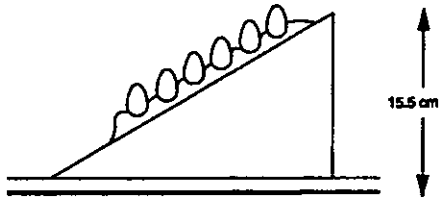
At most 4-H Egg shows, a flat of eggs (22 dozen) must be shown. Your eggs should not be more than three days old and the eggs' air cells should not be over 0.5 cm deep. Check your eggs for ridges, bumps and, in brown eggs, watch for color. Try to choose eggs that are the same shade of brown. Don't choose eggs with freckles or blotches.

Make sure your eggs are clean. A gentle wash with warm, soapy water will take off most of the dirt and stains. Do not soak the eggs. This will change the interior quality. Sometimes a light sanding with fine sandpaper will take off stains and cage marks.

Candle your eggs before the show. Watch for odd-shaped yolks and for watery-looking albumens. Don't put in eggs that contain blood spots. It is much easier to candle white eggs than brown eggs. If you have chosen to show brown eggs, be very careful when candling so you don't miss any blood spots. Also watch for small cracks that usually show up when you are candling.

DRESSING UP YOUR DISPLAY

It can be fun to dress up your display with flowers, or posters, if these fit in with the standards of the show. Egg stands help the look of your exhibit too. An egg stand is a triangular stand that is 15.5 cm high at the back and level with the table at the front. It is as wide and as long as an egg flat. It can be made from wood or cardboard and decorated if you want.



SHOWMANSHIP OF DRESSED POULTRY

If you are raising broilers or roasters, you can't show them as live birds; you have to show dressed carcasses.

Good showmanship in this category begins with careful planning. Timing is also crucial so that you will have your broilers or roasting birds at the peak of perfection. Letting broilers grow too large or not having your roasters up to the proper weight can count against you.

Make sure you have made plans to have your birds dressed for you if you do not intend to do it yourself. Check with your leader as he/she may have plans to have all of the club's birds dressed at the same processing plant.

CHOOSING FOR SHOW

There are seven points to look for when choosing which dressed bird to show.

1. **Conformation**

   A prize-winning dressed bird will have a **good distribution of meat.** You don't want a bird that has breasts that are dented, crooked, knobby, or that are V-shaped or slabsided; backs that are narrow, crooked or hunched; legs and wings that are deformed; and bodies that are definitely wedge-shaped.

2. **Fleshing**

   A well-dressed bird should look **full and rounded.** You don't want a bird whose breasts are V-shaped or concave, rather than full and rounded; or who has breasts that are full near the wishbone but taper sharply to the rear; legs and drumsticks which are thin; or backs that have insufficient flesh to cover the vertebrae and hip bones.

3. Fat

Fat in poultry is judged entirely on how much is under the skin. This is true even for chicken parts. **Well-finished young birds will have less fat** under the skin on the breast and over the drumsticks and thighs than mature birds. It should be noticeable, however.

4. Freedom From Pinfeathers

Processors try to eliminate the problem of pinfeathers, particularly those just coming through the skin by timing their purchases to **coincide with completed feathering cycles.**

Ready-to-cook poultry must not have any protruding pinfeathers before it can be graded.

5. No Cuts, Tears Or Broken Bones

Exposed flesh resulting from cuts, tears, missing skin, and broken or disjointed bones takes away from the appearance of the bird and **lowers the quality** of the carcass.

6. No Skin Discoloration, Flesh Blemishes Or Bruises

Turkey and most frequently older turkeys, or birds in general, may have discolored areas over the back and wings and elsewhere. This condition, commonly called "blue back", may be caused by fluid that is usually only in the feather quills moving into the skin, or it may be a condition known as "dermal melanosis" which is genetic in nature. A similar color is often found on the base of the keel associated with breast calluses.

Breast blisters or calluses are fairly common in heavier birds as they sit longer than lighter birds.

To help prevent calluses, provide dry litter that is at least 10 cm deep. Moving among the birds occasionally, or feeding them more often will keep them more active.

7. Freedom From Freezing Defects

The discoloration and drying out of the skin of poultry carcasses during storage is commonly called "freezer burn." This **takes away from the appearance and sales value** of the carcass and also **lowers the quality,** even if the freezer burn is only moderate.

SHOWMANSHIP OF FANCY POULTRY

The first step is choosing the breed that is right for you. The most important thing to think about when you are choosing your breed of show bird is **how much space** you have to raise it. If you have a small space, a bantam bird may be the most appropriate for you.

You also have to think about the **work involved** in raising a show bird. If you are 145 cm and weigh 30 kg, a Jersey Giant hen might not be a bird that you can handle easily. A small bird may be better for you and you might enjoy it more.

GROOMING

Grooming your bird is something that **starts long before show day.** When you house your bird, keep it as clean as possible by using clean, dry bedding at all times. This cuts down on the cleaning and washing on show day. If you have kept your bird clean, dry and in good condition, chances are that you will not need to wash your bird on show day. On a colored, clean-legged breed, just washing the feet and legs and applying a touch of sweet oil and/or camphorated oil on the comb will be all that is needed to put your bird at its best.

Some breeds look best when washed or you may have to wash your project birds because they are dirty. There are **three steps to washing a bird: washing, rinsing and drying.** Each is important to a good job. It will help, especially in the case of large birds, to have someone help you with the washing.

For large fowl, you will need three or four fairly large tubs and, in the case of bantams, three or four small tubs or fairly large pails will do nicely. You will need a mild soap or soap flakes or some other mild detergent, several towels or soft, absorbent cloths to wrap the bird in after the wash.

In the **first tub, make lots of suds in the water,** which should be about the temperature that is comfortable to your arm. Keep your bird upright and push it up and down in the water to get it thoroughly soaked right down to the skin. Wash it carefully, always working your fingers through the feathers, never against, so as not to break any of the feathers. See that the legs are clean and that no dirt remains under the scales of the leg. Carefully use a toothpick or an old toothbrush to get the dirt from under the scales. After it has been well soaped and washed, it should then be **rinsed in the second and third tubs.** Be sure to get all the soap out of the feathers or the bird will look streaky and, in fact, worse than before the washing.

The last tub should be cooler, but not cold. It helps to put one-half cup of lemon juice in this water to remove any soap that is left on the bird. After rinsing, **wrap the bird loosely in the towel to soak up as much wetness as possible, then place in a clean coop to dry.** The coop temperature should be warm enough so that the bird will not shiver, but cool enough so that the feathers do not dry too fast. Washing should be done in the morning so that the bird will not sleep on its damp feathers and get them out of shape.

The birds should be watched as they dry to make sure that the feathers smooth out and do not curl. In the case of cochins, check to see if the feathers are fluffing out well. A small, hand-held hair dryer will help fluff out a cochin. Dusting the bird with cornstarch when it is nearly dry will help the drying process; in the case of white birds, the cornstarch tends to whiten them as well.

Colored birds can be greatly improved by gently rubbing the feathers with your hand or a silk cloth at least once a day to give them a nice gloss.

It takes patience, kindness and a lot of tender, loving care to produce a good show bird, but the results are well worth the effort.

AT THE POULTRY SHOW

A. REMOVE BIRD FROM COOP AND CARRY IT TO THE SHOW TABLE.

1. Remove the bird from the cage by grasping its left wing with your left hand. Place the left hand beneath the bird's body, with your index finger between its legs. The remaining three fingers should then grab one leg and the thumb circle the other. Place the right hand on the bird's back and remove the bird from the cage feet first.**

2. Carrying the bird to the judging table.

The proper way to carry a bird is to use the same left hand hold as in removing from the coop with the head under the elbow with right hand placed on the back.

The code of practice states that birds be removed from cages feet first. This practice is recommended in all cases but some show people prefer to remove show birds head first. **Removing birds head first is only acceptable for show birds. If you will be showing, check with your leader to see which method should be used.

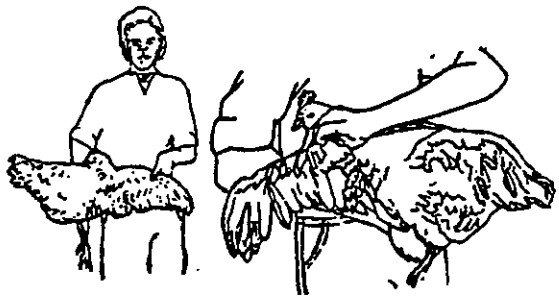
B. SHOWING YOUR BIRD TO THE JUDGE.

When asked by the judge, show the following.

1. The head

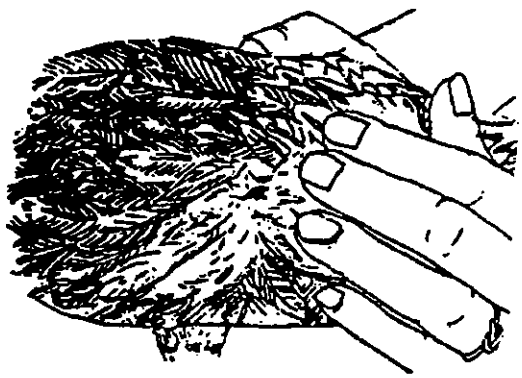
Holding in the left hand at shoulder height show both sides of the head. Use right hand thumb on beak to turn head while also turning left hand slightly when showing the right hand side of the bird's head.

2. Wings



Spread wings to show feather pattern and condition. Showing bird's right wing requires crossing right hand over bird with thumb up.

3. Undercolor



Show undercolor of back and body feathers.

Show width by using span of right hand over back.

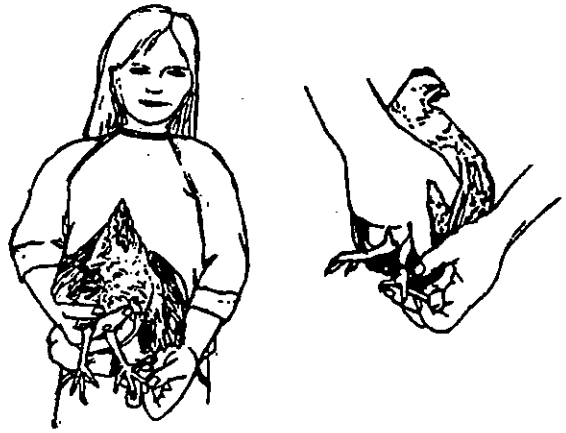
4. Width of body

5. Breastbone

Show breastbone by turning the back of the bird against your body with the left hand. With right hand grasp legs and pull to your right while sliding left hand to breast to expose breast between fingers of the left hand.

6. Feet and legs

Show feet and legs by placing bird against your body with head up using left hand. With right hand show feet and spread toes.



Pose the bird on the table. It is most natural to place bird on the table facing your left. Pose the bird to show it to advantage. This

7.	Pose the bird	is the most important part of showing a bird.

C. APPEARANCE, ACTIONS AND KNOWLEDGE OF SHOWPERSON.

1.	Appearance	Be neat and appropriately dressed for the occasion.
2.	Actions	Carry out actions in a confident manner always being considerate of your bird, fellow showpeople and the judge. The judge should have your attention at all times so that he/she doesn't have to come to you to get your attention to move your bird or take some other action.
3.	Knowledge	Be prepared to answer questions about your bird with reference to parts, defects, disqualifications, breed and a variety of characteristics.

D. CARRY BIRD FROM TABLE AND RETURN TO COOP.

1.	Return bird to coop.	Carry bird away and return to coop always head first.

DETERMINING QUALITY FOR ACHIEVEMENT DAY

Here, in more detail, are the seven points to consider when selecting dressed birds for show.

1. CONFORMATION

The bone or skeletal structure of the bird determines, to a considerable degree, the distribution and amount of meat. Certain defects in structure detract from the sales appeal of the carcass.

2. FLESHING

The drumsticks, thighs and breast carry the bulk of the meat. There is, however, a definite correlation between the covering of the flesh over the back and the amount of flesh on the rest of the carcass. Females almost invariably carry more flesh over the back and will generally have a more rounded appearance to the breast, thighs and legs.

3. FAT

Some consumers have a preference for birds with white or light coloured fat. Others prefer yellow fat. The colour of the fat is not a part of the fat factor in quality. As pointed out earlier, fat in poultry is judged entirely on the basis of how much is under the skin. This is true even in the case of chicken parts. Accumulations occur first around the feather follicles in the heavy feather tracts. Poorly fatted birds may have some accumulation of fat in the skin

along the heavy feather tracts on the breast. As the bird progresses in "finish", accumulations will be noted at the juncture of the wishbone and keel and where the thigh skin joins the breast skin. At the same time, accumulations will be noted around the back and hips. Well finished older birds will have sufficient fat in these areas and over the drumsticks and thighs so that the flesh is difficult to see. Fowl which have stopped laying have a tendency to take on excessive fat in the abdominal area. Well finished young birds will have less fat under the skin between the heavy feather tracts on the breast and over the drumsticks and thighs than mature birds. It should be noticeable, however.

4. FREEDOM FROM PINFEATHERS

There are two types of pinfeathers to be considered in grading. They are, 1) protruding and 2) non-protruding. Protruding pinfeathers are those which have broken through the skins and may or may not have formed a brush. Non-protruding pinfeathers are those which are in evidence but which have not pushed their way through the outer layer of skin.

Ready-to-cook poultry must be free of protruding pinfeathers before a quality designation can be assigned. In this connection, the regulations define the words "free from protruding pinfeathers" to mean that the carcass is free from protruding pinfeathers which are visible to an inspector or grader during an examination of the carcass at normal operating speeds. However, a carcass may be considered as being free from protruding pinfeathers if it has a generally clean appearance, especially on the breast, and if not more than an occasional protruding pinfeather is in evidence during a more careful examination of the carcass.

Vestigial feathers, hair in the case of chickens, turkeys, guinea fowl and pigeons, and down on ducks and geese, must also be considered.

5. FREEDOM FROM EXPOSED FLESH RESULTING FROM CUTS, TEARS AND BROKEN BONES

Tears and missing skin permit the flesh to dry out during the cooking process, thus lowering the eating quality of the bird. The number and extent of such defects permitted depends on their location, whether on the breast or elsewhere on the carcass.

6. FREEDOM FROM DISCOLORATION OF SKIN AND FROM FLESH BLEMISHES AND BRUISES

When poultry was dry-chilled and dry-packed, abrasion or removal of the outer skin was a serious matter and good processors took every means to avoid damaging the outer layer of skin that would cause discoloured areas as the skin dried. Today, most poultry is sold either ice-packed or wrapped in a water-resistant material. Either method prevents air from reaching and drying out the areas from which the outer cuticle has been removed. The result has been that much of the poultry is scalded at temperatures around 60EC and all of the cuticle is removed. This facilitates removal of pinfeathers and cuts down operating costs. Abrasions, as a consequence, do not become a problem unless the poultry has been exposed to the air, in which case the abrasions dry out and become discolorations. If this has occurred at the time of the examination, the size of the areas are taken into consideration under the heading of "discolorations."

Bruises in the flesh or skin are permitted only to the extent that there is no coagulation or clotting (discernible clumps of red cells). Small clots in the skin or on the surface of the flesh may be cut to allow them to leach out in the chilling process. Such cuts would be taken into consideration in determining the quality. Blue or green bruises must be removed before grading. Excessive grade-loss because of bruises should be called to the attention of the management.

7. FREEDOM FROM FREEZING DEFECTS

The skin of frozen poultry often shows a condition known as "box burn." This shows up as a white area where the skin has come in contact with the lining of the box. The outer cuticle is the only part affected. This condition should not be confused with that of freezer burn. In grading, box burns would be included under discolorations.

In addition to freezer burn, there are other freezing defects of significance in establishing the grade of consumer packaged poultry, parts, or specified poultry food products. These are darkening of the carcass due to slow-freeze or defrosting, and, in the case of consumer packaged poultry or parts, seepage of moisture from the product resulting in layers of clear, pinkish or reddish ice.

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POULTRY - HOUSING AND MANAGEMENT
DIGGING DEEPER

Optional Information For Senior Members

Eat, Drink and Grow

CAREER OPPORTUNITIES IN THE POULTRY INDUSTRY

There are a variety of career possibilities in one aspect or another of the poultry industry.

POULTRY PRODUCERS

The best way to gain knowledge about current poultry operations is to work as a labourer in the industry. To be a poultry farmer you need a working understanding of poultry production, business practices and management techniques. Courses in accounting and business management are assets. Many poultry operations currently employ farm managers, supervisors and technicians.

POULTRY SCIENTISTS

Poultry scientists study breeding, feeding and management of poultry to improve the quality of eggs and poultry products. Research is very important to the development of the poultry industry.

POULTRY BREEDERS

A knowledge of genetics (the study of heredity) is the basis for a career as a poultry breeder. Their job is to develop a system for breeding birds to achieve desired characteristics such as fast growing, resistant to disease and quality sources of meat and eggs.

BIOLOGISTS

Biologists often specialize in certain areas. The development of hybrid plants to produce better feed is an area important to the poultry industry.

There are many other poultry related career areas available as well. Some of these include:

- writers for technical publications
- salespeople of specialized poultry equipment
- service jobs for poultry products
- consultants to producers and the government
- planning and administering testing programs for products and drugs

- laboratory research or on-farm research
- public consultants to the poultry industry
- media and promotion work
- teachers in agricultural colleges.

Environmentally Happy

ENERGY CONCERNS IN THE POULTRY INDUSTRY

Studies are continually being conducted on how to reduce energy costs in poultry barns.

Regular incandescent bulbs are now being replaced by compact fluorescent bulbs in many operations. A compact fluorescent bulb uses only a fraction as much electricity and lasts about ten times longer than incandescent bulbs.

Probably the greatest energy expenditures occur in the heating and ventilation systems.

HEATING AND VENTILATION SYSTEMS SHOULD:

- remove moisture
- remove heat
- control temperature without wasting heat
- provide adequate air quality and optimum temperature or cooling effect depending upon the age of the birds and the season of the year
- provide a uniform temperature and air quality throughout the pen
- provide adequate air movement without drafts to ensure good air quality and comfort at the bird level.

TO ACHIEVE THESE OBJECTIVES THE OPERATION MUST HAVE:

- a tight, well-insulated barn
- a heating system that directs or supplies the heat where it is needed or can deliver heat evenly
- ventilation fans that produce any ventilation rate needed from the low rate for brooding up to the rate for summer cooling of mature birds at high density, and function against wind, still giving a tight well-insulated barn.
- fresh air inlets that provide fresh air evenly to the pen without drafts at any ventilation rate
- a system to control the ventilation rate and the temperature
- a system to control the uniformity of pen temperature
- a system to provide air movement and air mixing

BEST EQUIPMENT CHOICES

Barns up to approximately 12 m wide are efficient with the air intake on one side only.

Buildings 15 to 18 m wide require air intakes on both sides. To keep air intakes clean, it is best to operate as much as possible by ventilating in the direction of the wind. These wide barns can be ventilated using intake-recirculating-exhaust units and possibly also intake-recirculating units with separate exhaust fans. It is a good practice to mount fans hinged like a door to swing in for servicing and to install a fan opening cover.

Hot water systems provide steady even heat. Since the temperature of the heat source is lower than most systems, the water pipes must be mounted close to the brooding area if any radiant heating effect is to occur. Radiant heating is heat transmitted through the air from a warm object to a colder one.

Gas fired radiant tube heaters or electric heat, if properly maintained, are good heat sources.

Many operators have considered **"Heat Recovery"**. Heat recovery is a system which captures and uses heat that would otherwise be rejected. Ventilation air exhausted from poultry barns is a source from which heat may be recovered. During the winter, heat is recovered from exhaust air by transferring it across a thin solid sheet of material to the incoming fresh air.

There are many designs of **heat exchangers** but their function is the same, namely the transfer of heat from a warm airstream to a colder one. Only heat is transferred across the heat exchange surface. None of the dust, noxious gases or moisture contained in the exhaust air get into the fresh incoming air with a true heat recovery system.

This system uses energy efficiently and enables the producer to reuse a waste product. Any changes that result in energy savings for the producer also help the environment by placing fewer demands on our natural resources.

Home Sweet Home

PROMOTING YOUR PRODUCT

Today's consumers are very conscious about good value for their dollar as well as healthy lifestyles. **They expect top quality products and reasonable prices.** As a producer it is important to present your product in the best light possible.

Farm tours are a valuable promotional tool. If you offer farm tours be sure the farm and the animals are clean. Use your tour as a way to show that you do care about your animals. When describing the feeding system stress the positive, by assuring the visitor that your birds are fed a balanced ration of minerals and vitamins to keep them healthy.

Visitors should not be permitted inside the barns due to the possibility of disease, but you could show the egg-grading room or show the ways you keep your barns comfortable for the birds. By explaining how quickly the eggs are gathered and graded, the consumer will feel assured they are fresh.

When speaking to a tour group, **use language they will understand.** Most consumers are not familiar with terms such as OFA or GATT etc. Make yourself available to answer questions completely and pleasantly. Farm tours are an excellent way to use positive strategy. **The more educated the consumer is about the poultry industry, the less misconceptions will spread.** Farm tours build friendships. Once you have gained their friendship and respect, consumers will be more receptive to respecting your production methods, and understanding the value of your product.

If a visitor voices a different opinion on how birds should be raised, staying calm and being tolerant are the most effective ways of dealing with the situation. If you encounter an animal rights activist and are not comfortable with the situation, seek assistance. Never argue or lose your temper. By remaining calm and answering his or her questions honestly, you can show your professionalism. As a poultry producer, you have spokespersons for your industry that you can refer people to for specific questions. The Ontario Farm Animal Council is a good source of information, 7195 Millcreek Drive, Mississauga, Ontario L5N 4H1 (905) 821-3880.

Born In a Barn

QUOTA

A producer's quota is the maximum number of birds he/she is entitled to market or raise for egg production. Producers pay for their quota, or right to produce, and quota is the biggest single cost of getting into the poultry business in Ontario.

THE EGG INDUSTRY

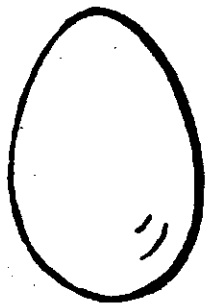
Before 1972, the egg industry was very chaotic with large fluctuations in egg prices. When the price of eggs was high, the farmers overproduced which caused the price to drop. Producers then cut back on their production, which led to shortages and high prices again. In establishing a marketing board, producers accepted production limits in return for more stable incomes.

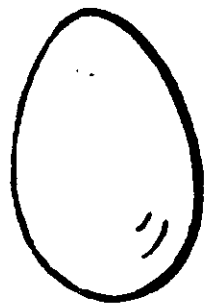
When the Ontario Egg Producers' Marketing Board was formed in 1972, quotas were allotted to producers at no cost. Egg producers elect 11 members to a board of directors who make all the decisions of the Ontario Egg Producers' Marketing Board (OEPMB). The OEPMB has a full-time staff of 23 people; they make sure regulations are followed and they oversee programs such as promotion, research, and advertising and provide technical assistance as needed.

The board also sets prices paid to producers according to what it costs to produce the product.

Very small flocks can be exempt from quota requirements. If a farmer was in business prior to July 5, 1983, he/she may keep a flock of up to 500 hens without having quota. This is not a transferable right. Anyone starting into the egg business on or after July 5, 1983 may keep only 99 hens without having quota.

If a farmer wishes to sell his/her quota, it must be listed for 30 days in the OEPMB monthly newsletter. The board assesses the vendor 10% of the quota being sold, or in other words, the board holds back 10% of the quota, and reimburses the farmer for it at $10 per hen. The value for quota traded under the listing system is reported to be about $60 per hen (in 1996).





PULLETS

Producers must assure themselves of a market for their birds by contracting to a buyer. Pullet quota was introduced on November 4, 1982. There is a provincial market only for about 70% of the total quota. Pullet quota can be transferred without premises, or in other words without the barns and buildings. The Ontario Egg Producers' Marketing Board regulates the quota.

The seller must list quota for sale for 30 days in the newsletter. Once he/she decides to sell, he/she must sell all quota within six months. The board takes a 50% assessment or keeps half of the quota with no compensation and the remainder may be sold. This has reduced the amount of quota available since farmers are reluctant to sell quota when they will be compensated for only 50%. Sales of quota are infrequent making it difficult to determine prices but $2 per bird of useable quota is an estimate. Producers may have more quota but are only able to use a portion due to board regulations.

THE TURKEY INDUSTRY

There are about 160 producers in Ontario. The amount of turkey quota available is based on the number of kilograms of turkey meat allotted to Ontario by the national board. Turkey quota was originally allotted in 1969. Recently, turkey producers could use about 70% of basic quota. Most facilities are used to 95% capacity.

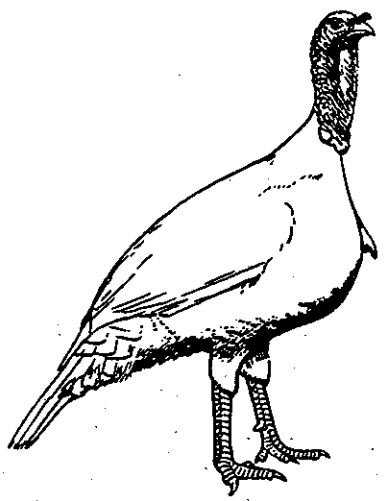
A producer is allotted one or more types of turkey quota.

Broiler	-	does not exceed 5.4 kg live weight
Hen	-	over 5.4 kg up to 9.0 kg live weight
Tom	-	over 9.0 kg live weight
Breeder	-	over 28 weeks of age

Turkey quota can be transferred with or without buildings. The upper limit for a producer is two million pounds of basic quota. The Ontario Turkey Producers Marketing Board does approve transfers of quota but does not demand price information on quota transfers or a breakdown of values for whole farms. Fifty turkeys per year per farm may be kept without quota for personal use only.

The low number of quota transfers in a year make it difficult to report values but these are estimated figures:

1971-72 . about 3 cents per pound
1996 ... about 65 cents per pound.



THE CHICKEN INDUSTRY

The Chicken Farmers of Ontario has had quota since 1965. In 1973 the scope of the board was expanded to include roasters. Roaster quotas were allotted at no cost. The two were later merged.

Quota cost is approximately $20.00 - $23.00 per unit although the board does not demand information about the sale price of quota. Each unit represents kilograms per producer per year. This is based on the number of kilograms of chicken allotted to Ontario by the national board. The minimum number of units that may be purchased by a new producer or an existing producer is 15,000 units. Producers will grow 5-6 crops of broilers per year. The broiler industry is growing each year, as more producers come into the business. The board has issued additional quota on a crop to crop basis as demand warrants.

One hundred broilers may be kept per year per farm without quota for personal use only.

HOW TO REACH THEM

Chicken Farmers of Ontario
3380 South Service Road
Box 5035
Burlington, Ontario
L7R 3Y8
905-637-0025
Fax: 905-637-3464

The Ontario Egg Producers' Marketing Board
7195 Mill Creek Drive
Mississauga, Ontario
L5N 4H1
905-858-9790
Fax: 905-858-1589

The Ontario Broiler Hatching Egg Producers' Association
R.R. #3
Petrolia, Ontario
N0N 1R0
Telephone and Fax: 519-882-3510

The Ontario Turkey Producers' Marketing Board
60 New Dundee Road
R.R. #2
Kitchener, Ontario
N2G 3W5
519-748-9636
Fax: 519-748-2742

The Ontario Broiler Hatching Egg and Chick Commission
251 Woodlawn Rd W
STE 213
Guelph, ON
N1H 8J1
519-837-0005
Fax: 519-837-0464

Good Neighbours

THE FARM PRACTICES PROTECTION BOARD

The Farm Practices Protection Board has been in operation since 1989.

The Ontario government set up the six-person board composed of people in the agricultural sector, namely farmers, to shield them from nuisance complaints.

The Act, written in 1989 states that a farmer "is not liable in nuisance to any person for any odour, noise or dust resulting from a normal farm practice and shall not be prevented by injunction or other order of court from carrying on the agricultural operation." Complaints such as odour from an intensive swine operation or noise from a grain dryer would be heard by the Farm Practices Protection Board.

Nuisance complaints can cause a great deal of disruption in a farmer's life and hamper the ability of a farmer to earn a living.

Some changes may have to occur however, since the Farm Act must give way to the Environmental Protection Act. This means individuals could launch environmental complaints against farmers.

How would you have ruled on these three cases heard by the Board?

CASE 1

A Swiss-born farmer used the practice of his homeland by putting bells on his cattle. In the evenings, the cattle congregated in the corner of his farm near his neighbour's windows. The neighbour left his windows open at night because he did not have air conditioning. He could not sleep because the bells kept him awake.

CASE 2

A farmer was getting her fields ready to plant a ginseng crop and she wanted to empty her soil of organic matter. Her neighbours complained that too much soil was blowing onto their properties.

CASE 3

A farmer operated his tractor to run a water pump to irrigate his pumpkin crop and fruit trees. The neighbours complained that the tractor noise was disrupting their lives. The farmer only operated the tractor during the daytime, and moved his tractor behind some trees as far away from the cottagers as he could.

POULTRY

Housing and Management

A Guide for Leaders and Youth Leaders

Ontario 4-H Council

Ontario Ministry of Agriculture,
Food and Rural Affairs

4-H 1900 98 LE

The Ontario 4-H Program provides opportunities
for the personal development of youth.

THE 4-H PLEDGE

"I pledge:
My Head to clearer thinking
My Heart to greater loyalty
My Hands to larger service
My Health to better living
For my club, my community and my country."

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This project was originally prepared by
Bonnie Popov, Essex, for the Ontario 4-H Council
and updated in 1997 by Diane Spratt.
Special thanks to the original advisory committee which included
Marilyn Charlton, 4-H Member; Robert Stinson,
4-H Leader, and OMAFRA staff.

This project was jointly funded by the Ontario 4-H Council and the Ontario Ministry of Agriculture, Food and Rural Affairs.

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BE A "GREEN" 4-H CLUB

The 4-H program uses a lot of paper. Please help us to reduce our costs, and save a few trees, by remembering these tips.

- Only 4-H members (10-21) and screened volunteers should receive 4-H resources.
- If your club plans to do this project again, keep the resource materials so you don't need to reorder.
- If your club has extra resources, please return them promptly to the Ontario Ministry of Agriculture, Food and Rural Affairs office so they can be used by someone else.

WELCOME TO 4-H

It has often been said that, "Volunteer 4-H leaders are a blend of friend, teacher and parent." What a big order to fill! But you will discover that you have many talents as a 4-H leader. Having an interest in young people and their development and being willing to take up the challenge of 4-H leadership is the first step to success.

This project focuses on the housing and management of poultry. However, the development of members as individuals is your real goal. You will get to know the club members and where their interests lie very well. Use this knowledge, your own expertise and imagination to help members plan a fun, interesting and challenging club program. And enjoy being a 4-H leader!

RESPONSIBILITIES

Before your project begins:

1. Familiarize yourself with current provincial and local 4-H policies;
2. Attend a leader training session (if scheduled);
3. Advertise the project and organize a club with a minimum of six eligible members and one volunteer leader per club except in cases deemed to be unique and approved by the local 4-H Association; and
4. Review available resources and begin planning the club program.

During the project:

1. Attend each meeting and the Achievement Program;
2. Assist members in planning and presenting the club program;
3. Provide a FUN, learning atmosphere;
4. Ensure the club membership list is completed and registration fees are collected. Forward to the designated person in your area before the second meeting;
5. Order awards and project and name plates once membership list is completed.
6. Help each member set and achieve goals for personal development;
7. Encourage members to work together as a group;
8. Provide guidance in choosing and completing an Achievement Program; and
9. Evaluate the club program. Share the evaluation with the 4-H Association and the Ontario 4-H Council.

4-H CLUB PROGRAM PLANNING

A successful 4-H club doesn't just happen! Careful planning is necessary and very important. As a 4-H leader, you have a responsibility to do the best job you can in providing a fun, learning experience for the 4-H members. Planning will make this a reality.

The 4-H Volunteers' Handbook has lots of valuable information to help you and your members plan a successful club program. Refer to "The 4-H Meeting" section of your handbook for tips on planning successful meetings, effective communication, games, judging and special events. The chart on page 3, of this Guide, can be used to record your plans.

WHAT IS AN ACHIEVEMENT PROGRAM?

- An opportunity for members to share with others the knowledge and skills they have gained during this 4-H project.
- An activity that involves each member in some way.
- A chance to inform the public about the purpose and goals of the 4-H program.

Achievement Program ideas specific to this project are suggested below. Your club may wish to choose one idea or combine a few. Involve club members in selecting a suitable idea and making the necessary preparations.

Contact the local newspaper or radio to tell them about your activity, the date, the time and where it will be held.

Send out a personal invitation to the group you plan to invite to the Program, or send a personal request from your club to visit an organization and present your Achievement Program. Don't forget to include parents/guardians and/or family members.

Invite parents, the public, media and other youth groups to your Achievement Program.

Here are some suggestions. You may wish to chose one idea or a combination of a couple. The type of program should be selected by the second meeting. You may require some preparation time at your meetings prior to the Achievement Program.

Members could hold their Achievement Program at a local fair or a local plowing match. Set up classes for different breeds. Contact a local poultry judge to score all the members on showmanship and conformation. Members could also give a short 2 or 3 minute talk on their bird. They might discuss any difficulties they had raising their birds, the breed of the birds and the specific housing they used. Their extra activities could be displayed at the fair as well. Members could compete for grand and reserve champions. The members should be involved in all aspects of organizing and exhibiting in the show.

Set up a large display at a local festival, school, plowing match, etc. Have members demonstrate how to hold a bird, remove it from a cage and answer questions from the public. This would also serve as a good promotional activity for 4-H.

Have an "Open Barn"! Invite parents, other 4-H clubs, media, the public and other youth organizations. Set up stations covering the topic areas or skills learned in this project. Demonstrate handling poultry and invite your guests to "learn to do by doing".

4-H CLUB PROGRAM PLANNING CHART

MEETING OR EVENT	DATE	TOPIC ACTIVITY OR TASK	PEOPLE WHO COULD HELP	PRESENTATION IDEAS TO CONSIDER

Some communities have cable television stations looking for community programming. Approach them about the possibility of your 4-H club developing a video covering some of the topics in this project.

Arrange for a demonstration at a local school. This would be a great way for students to learn about 4-H and poultry. This activity might coincide with an "Agriculture in the Classroom" activity. 4-H members could be paired with younger students and show them how to handle poultry correctly as well as describe and show the parts of a chicken.

RESOURCES

1. The benefit of a guest speaker(s) or the use of films/videos to present material in an interesting and lasting way cannot be emphasized enough. Remember, the effective use of speakers, resource ideas and activities depends on some PLANNING AHEAD.

2. Several teaching ideas have been suggested in the Leaders' Guide. Some of them may be used as small posters or reproduced on a blackboard, flip chart or overhead transparency for greater impact.

3. OMAFRA publications are available through your local OMAFRA office. OMAFRA videos and films are available through the A.V. Library, OMAFRA, 1 Stone Road West, Guelph, Ontario, N1G 4Y2 1-888-466-2372, extension 6-3682 FAX (519) 826-3358 and arrange for these well in advance.

FEEDBACK

The 4-H Resource Development Subcommittee of the Ontario 4-H Council reviews and evaluates 4-H resources. Comments and suggestions about 4-H manuals and guides are always welcome. They may be sent to the following address:

4-H Resource Development Subcommittee
Ontario 4-H Council
R.R. #1 Thornloe, Ontario P0J 1S0
1-800-937-5161.
E-mail: lduke@ntl.sympatico.ca
http://www.4-Hontario.ca

At the bottom of the table of contents page in the Members' Manual you will see the Kids Help Phone logo and number. Kids Help Phone is available to over 7 million children and teenagers throughout Canada.

It is a national, bilingual, confidential, toll free helpline staffed by paid, trained professionals. In response to the problems and concerns of our youth, Kids Help Phone provides a listening ear, emotional support, counselling, information and referrals. Children and teens from anywhere in Canada can call anonymously 24 hours a day, 365 days a year.

Children and teens can call about anything that is bothering them including - abuse; drugs; alcohol; conflicts with parents, friends or teachers; pregnancy; sexuality; suicide; or parental separation and divorce.

Please mention this number to your members and explain what it is for. Make sure they know that it is free and they don't have to give a name or address.

http://kidshelp.sympatico.ca

The Kids Help Phone answers 1500 calls a day... 2500 more get a busy signal. If you or your club or someone you know would like to make a donation to the Kids Help Phone, call 1-800-268-3062.

MEETING ONE EAT, DRINK AND GROW

SPECIAL NOTES FOR THIS PROJECT

1. The Members' Manual has been designed as a reference source. Encourage members to leave their manuals closed for most of the meeting, allowing them to observe, learn and take part in the discussion and other activities. It is **not necessary to read** all the information given in the Members' Manual during the meeting. The page numbers in this Guide refer to the Members' Manual unless otherwise indicated.

2. You are free to change the order of meetings and information if you like. **Also, remember if you do rearrange the order of meetings, you might need to reorder the Before the Next Meeting Activities so that they fit with the Roll Calls.** The schedule of meeting dates can be recorded on page 3.

3. **Remember to Refer to Your 4-H Volunteers' Handbook** - You will find many useful tips and ideas covering topics such as program planning, successful meetings, parliamentary procedure, effective communicating and presentation methods. Refer to your Volunteers' Handbook as you plan meetings. If you do not have a handbook, please contact your 4-H association.

   Getting Started (15 minutes)
   1. Begin with the 4-H pledge.
   2. Welcome the members. Introduce leaders. Have members introduce themselves (if not already done). Introduce the youth leader (if this has been decided). Ensure that everyone has a name tag (optional).
   3. Complete membership list.
   4. Outline the opportunities members have such as taking part in the local fairs, 4-H Go For The Gold, 4-H Members' Conference etc...
   5. Distribute "4-H Project" signs if available.
   6. Distribute the Members' Manuals.
   7. Give a brief summary of what club is about and topics covered.
   8. Discuss the members' requirements for the project (page 1). Outline any expectations you have of the members.
   9. Briefly discuss the Achievement Program possibilities.

   It is important for everyone to become familiar with the basics of running a good meeting. Review with members the purpose of an agenda as well as the executive's responsibilities. Have the club members elect an executive. The 4-H Volunteers' Handbook and the OMAFRA Factsheet, "Procedures for Meetings," (89-095) may be helpful.

4. **Judging** - Judging tips is an optional activity in meetings one through four in this project. These tips have not been included in the normal one hour meeting time. Each member should have access to a 4-H Judging Handbook (4-H-1550-91) and be encouraged to use it. These can be obtained through your 4-H association.

5. **Fitting and Showing** - Meeting six is all about fitting and showing. It can be held

whenever it is convenient for your club, depending on the date of the Achievement Program. If members will be showing at the Achievement Program they should be encouraged to start working on their fitting and showing skills right from Meeting One. Keep tabs on members' progress. Some members may not have anyone at home to ask for help. It is a good idea to pair an experienced senior member with a junior member who could use some help or encouragement. Also assist members in finding a bird to look after if they do not own birds.

6. **Optional Activities -** There are meeting activities, meeting mixers and extra topics for discussion that have been listed in THIS GUIDE ONLY. They provide greater detail and information and should be used as a resource for meeting presentation.

7. If members are interested in caring for birds it is suggested that they
   - accept responsibility for the care and management of their poultry project,
   - raise at least 25 laying hens if they choose to raise layers,
   - raise at least 25 meat birds and have them dressed if they choose to raise meat birds,
   - raise a minimum of a male and female pair of fancy poultry from chicks if they choose to raise fancy poultry,
   - raise three birds of any breed if they are unable to choose one of the above projects.

OBJECTIVES

1. To welcome members to the club.
2. To introduce leaders and members.
3. To make the members aware of the project requirements.
4. To guide members through the election of an executive.
5. To introduce the topic of poultry housing and management.
6. To give some guidelines about choosing a breed they will or could raise (optional).

PREPARATION AND EQUIPMENT

Visit a local feedstore before this meeting and ask to borrow some examples of hand-held feeders and waterers. Four different designs of each would be suitable. Obtain the cost and some advantages and disadvantages of each from the store for use in a judging activity.

Materials you will need for this meeting include:
- Membership list
- Enrollment cards
- Members' Manuals
- "4-H Club Project" signs
- Poultry Care Guide for new members.

TIME GUIDELINES

A time guideline has been provided for each section of the meeting. Please remember that this is only a guideline. The number of members, their maturity, specific interests and the way the meeting is structured will all influence the duration of specific activities.

IN A NUTSHELL

Meeting Mixer	10 min
Getting Started	15 min
Roll Call	5 min
A Road Map to Good Meetings	20 min
Let's Eat!	10 min
Drink Up!	10 min
Before the Next Meeting	5 min
	75 min

Optional: Judge's Corner
Digging Deeper

MEETING MIXER (10 minutes)

At this first meeting, you should consider having an activity to help your members learn a little about each other and get them talking to each other. Sometimes it is difficult to get new members to contribute to the meeting but if you make a game out of it right from the beginning, somehow the snowball gets rolling.

Not all your members will know one another at this first meeting. A game like "Mother Hen packed her 4-H suitcase" will get the members smiling and learning something about each other.

Each member adds something of his/her own to the 4-H suitcase in turn. Here is an example.

The first person might say, "Mother Hen packed her 4-H suitcase and in it she put (here the member would state his name) Jason Smith's new baseball glove." The second person would then begin by repeating the previous item and adding one of her own. For example she might say: Mother Hen packed her 4-H suitcase and in it she put Jason Smith's new baseball glove and Mary Stewart's math homework. The game continues on until someone is unable to repeat everything in order. That person is then out but the game continues until only one person is left who can repeat everything in the 4-H suitcase in order. This game gets everyone's name repeated many times and is a good way to get members talking.

ROLL CALL (5 minutes) page 7

The roll call is used as a way of introducing members and encouraging them to participate in the discussions at each meeting. Timid members in particular should be given the opportunity to speak up during roll call. Be sure that all members understand that poultry ownership **is not** a prerequisite for becoming a 4-H member.

If you were allowed to have only one kind of food and one kind of drink for a whole week, what would you choose?

It is hoped by this roll call that the members will think about choosing some nutritional food, since it is all they will have for one week.

A ROAD MAP TO GOOD MEETINGS (20 minutes) page 6

At the first meeting, it is important for everyone to get to know each other and become familiar with the basics of running a good meeting.

The club president will chair the short business section at the beginning of each meeting. Helping members to understand and use the basics of running a meeting will help them to become familiar with the process.

KEEPING YOUR CLUB GOING (5 minutes)

Prior to encouraging club members to take an executive position, they should have a good understanding of each position.

LET'S EAT! (10 minutes) page 7

Discuss and demonstrate the various types of feeders available for birds as well as some of the feeders used in commercial operations.

DRINK UP! (10 minutes) page 8

Discuss and demonstrate the various types of waterers available for birds, the advantages and disadvantages and costs of each obtained from the store. Explain the automatic systems in use in some operations.

Agriculture and Agri-Food Canada Publication 1860E "Raising Chicken and Turkey Broilers in Canada" has this information, and may be available from your local OMAFRA office.

BEFORE THE NEXT MEETING (5 minutes) page 10

Talk to the members about choosing their breeds, and what is best for their situation as far as space, suitability, etc.

Encourage members who are interested in raising birds to get their chicks if weather permits.

JUDGE'S CORNER (Optional) page 10

Use the feeders and waterers that you have borrowed and set up two judging activities for the members. Include the price of each item and have the members judge the two classes. Have the youth leader or leader judge the classes before the meeting and give his/her reasons after the members are finished the activity. Check how the members did. The members will judge these as being best for someone raising up to 25 birds.

DIGGING DEEPER - OPTIONAL INFORMATION FOR SENIORS, Separate handout

This material will give the senior members some information about careers in the poultry industry. Ask the members if they can think of any other specialty fields that might be available. Perhaps there is someone in the area involved in one of these fields that could come to a meeting and discuss their job with the members.

CAUTION

Farm visitors can spread diseases within a farm and among farms. People spread contaminated material directly on footwear, hands and clothing.

Farm families hosting a 4-H meeting should ask visitors to comply with certain precautions to protect their livestock. These may include the use of a sanitary footbath or wearing plastic disposable boots and clean coveralls. As a courtesy, 4-H members should arrive at the host farm with freshly laundered clothes and clean rubber boots. Upon returning home, 4-H members should change to different clothes and boots before entering their barn.

Remember, some diseases are spread very easily. Animal welfare, pride in stockmanship and peace of mind are reasons to prevent spread of diseases. The cost associated with a disease outbreak are another.

MEETING TWO ENVIRONMENTALLY HAPPY

OBJECTIVES

1. To show how a bird loses heat.
2. To explain the purpose of heating and ventilation systems.
3. To explain the causes and effects of heat stress.

PREPARATION AND EQUIPMENT

1. Factsheets that may be available from your local OMAFRA office include

93013	Poultry Manure Handling
93035	Basic Husbandry for Broilers
93039	Basic Husbandry for Turkeys
88111	Heat Stress in Caged Layers
93039	Basic Husbandry for Layers

2. You could plan a visit to a commercial layer or broiler operation as part of this meeting, looking specifically at heating and ventilation systems.

   You could also invite producers to discuss ventilation and heating systems in their operations. Make sure that the discussion does not become too technical for the younger members.

3. For the judging activity, examples of heat lamps could be used. Make sure the members are familiar with the advantages and disadvantages of each. Also indicate the price of each item.

   If it is not possible to get examples of heat lamps, another judging activity using feeders or waterers (if not used during the first meeting) would be suitable. Keep the judging activity simple for the younger members. Only the older members might be expected to give reasons. The older members could also help the younger members judge the class.

IN A NUTSHELL

Roll Call	5 min
Game	10 min
When It's Cold Outside	10 min
Turn Up the Air	10 min
Heat Stress	15 min
Ventilation Systems	5 min
Before The Next Meeting	5 min
	60 min

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 11

What type of feeder and waterer would you choose for someone raising 25 birds as a 4-H project?

You may want to check that each member who plans to raise birds has suitable equipment.

GAME (10 minutes)

BUILDING A 4-H STORY

This is a simple game to get the members talking and thinking before you begin talking about the technical information. To play this game, the 4-H leader or youth leader begins a sentence by saying only three words. For example: Today I went..... or My 4-H chicken..... Each member in turn adds only one word to the story. Continue going around all the members as long as the interest is there. You may stop the story at any time and see who can repeat the whole story without leaving out any parts. These stories usually get funnier as they go on. Or one member could write the story down word by word and that member could shout out STOP at any time. The next member whose turn it was to add a word would then have to repeat the story up to that point.

For suggestions of other games refer to Group Games and Social Recreation, 4-H 021-91, available from your OMAFRA contact.

WHEN IT'S COLD OUTSIDE (10 minutes) page 11

If you are visiting a poultry operation, check to see which heating system is being used. Members living on poultry farms may describe the heating systems used on their farms.

TURN UP THE AIR (10 minutes) page 11

It is important for the members to realize how much heat birds can produce in the barn.

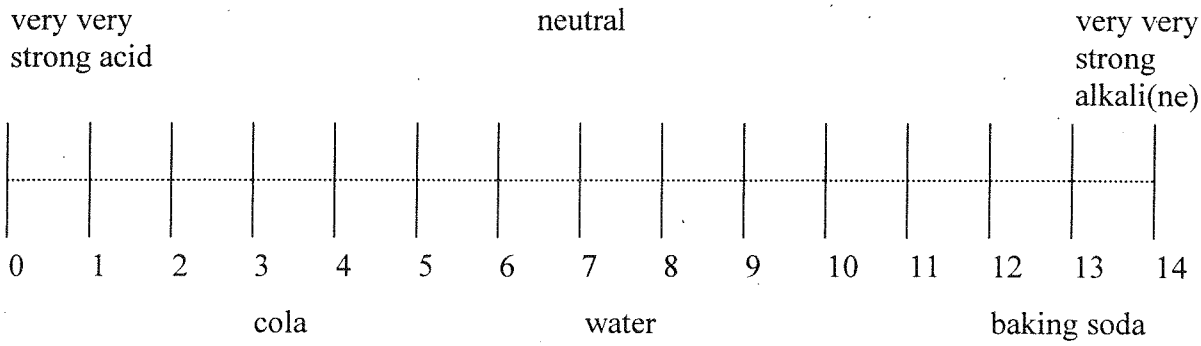
How a hen tries to lose heat should be stressed as well. The members can then relate to how important a ventilation system is in poultry operations.

HEAT STRESS (15 minutes) page 13

The symptoms of heat stress in the Members' Manual should be carefully discussed. It is also important for the members to realize that heat stress can just as easily occur in the winter.

The Members' Manual mentions that the blood of a bird under stress will become more alkaline. To help members understand alkalinity you might want to discuss the pH scale.

The pH scale is used to measure the alkalinity or acidity of something. If it has a pH of 7 it is neutral. If it has a pH less than 7 it is an acid. A pH greater than 7 is an alkali (alkaline) or base.



VENTILATION SYSTEMS (5 minutes) page 14

A toy barn or small portable building would help to demonstrate the negative and positive pressure systems.

NEGATIVE PRESSURE

Outside air is sucked in through fresh air vents under the eaves of the building and the wall fans in the building blow out the stale air.

POSITIVE PRESSURE

The wall fans blow in the fresh air and the stale air goes out through the roof vents. Hot air rises and is forced out through the roof vents.

By using the toy barn explain the air flow of each of these or have the youth leader explain this. Ask the members if they know of a producer that uses each method.

BEFORE THE NEXT MEETING (5 minutes) page 14

Go over the special activity ideas with the senior members and see that they are comfortable with what topic they have chosen.

Make sure the junior members are familiar with their special activity as well.

Ask the members to look in agricultural magazines and newspapers for pictures of poultry barns. They can bring them to the Home Sweet Home meeting. The pictures can also be used in a judging activity in the Born in a Barn meeting.

JUDGE'S CORNER (Optional) page 14

This activity should emphasize the importance of choosing good equipment in poultry operations. If possible, set up another judging activity for the members. Heat lamps for chicks would give the members a good basis for judging which kind of heat lamp they could use for their own chicks. There are several kinds available which may be borrowed from a store nearby, or if that is not convenient, pictures from magazines with a description of the heat lamp may be used. The senior members may help the junior ones. The youth leader may want to give reasons on the class of heat lamps.

DIGGING DEEPER - OPTIONAL INFORMATION FOR SENIORS, Separate handout

If you are visiting a commercial poultry operation, discuss the energy concerns of the producer. Find out what it costs to heat and ventilate one barn and determine if alternate methods could be used to save energy.

If you are not visiting a poultry barn, try to have a fluorescent compact bulb available to show the members. These are high energy savers.
Check if there is anyone in your area that is using a heat recovery system. This would be an interesting project for your members to see.

MEETING THREE HOME SWEET HOME

OBJECTIVES

1. To have members realize the importance of lighting.
2. To discuss the kinds of litter used in broiler operations.
3. To alert members to the causes of cannibalism.
4. To explain methods of sanitation used to prevent diseases.
5. To highlight the importance of record keeping.

PREPARATION AND EQUIPMENT

1. An energy advisor representative from Ontario Hydro would be a good resource person to come to your meeting to explain the recent innovations in poultry barn lighting and ventilation.

2. It is a good idea to have members become familiar with judging poultry sometime during the project. If you have a member that has fancy poultry, perhaps you could arrange with the member to have a class of fancy poultry available for judging at this meeting. Other breeds could also be used. A competent senior member or youth leader could explain what to look for when judging poultry for the other members. The members will then know what a judge will look for if they show their birds at a local fair.

3. If available, try to get some planer untreated wood shavings to show those members what the litter for broiler operations looks like.

4. To talk about record keeping, you could tape together the wall chart using pages 35-39 of this guide. The items to be recorded are on page 18 of this guide. Read out the items, and have members take turns recording them on the wall chart.

5. You'll be talking to members about the concept of relative humidity in this project. On the day before or of the meeting, try to find out what the relative humidity was outside, so members can compare the number to the feel of the air.

IN A NUTSHELL

Roll Call	5 min.
Game	5 min.
Lighting	5 min.
Relative Humidity	5 min.
Litter	5 min.
Controlling Cannibalism	10 min.
Disease Control	10 min.
Record Keeping	5 min.
Before the Next Meeting	5 min.
	55 min.

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 15

What is your favourite breed of poultry?

GAME (5 minutes)

This game is called Initial Fortunes. Each member writes his/her initials at the top of a sheet of paper. The papers are collected and redistributed so that no one gets his/her own. Using the initials on the paper in front of them, the members answer the following questions as the leader reads them aloud. By this meeting most of the members should know each other enough to have fun with this activity. If the initials were "H.H." the answers might be something like this:

1.	What does this person remind you of?	Happy Hunter
2.	How old does he/she look?	Half a Hundred
3.	What is his/her favourite pastime?	Hugging Horses
4.	What is his/her favourite food?	Huge Hamburgers
5.	Where will this person be in 10 years?	Hitchhiking Home

Pass the paper back to the owners and reread the questions to see who has come up with the most original answers.

LIGHTING (5 minutes) page 15

Explain to the members that producers will use different lighting depending on their operations. Energy costs are now a contributing factor in deciding on the lighting systems. A guest speaker from Ontario Hydro would help clarify new technologies.

RELATIVE HUMIDITY (5 minutes) page 16

Elicit from the members what relative humidity is and how it affects how we perform. You may need to explain that we use words like muggy or humid to describe a day when the relative humidity is high. If you've checked the weather report for yesterday or today, tell members what the humidity levels were. What did the air feel like? Relate this to poultry and explain that poultry also perform best when the relative humidity is comfortable.

LITTER (5 minutes) page 16

Emphasize to the members that clean litter is very important in broiler pens. Have the members talk about what would affect the condition of the litter in the pens. There are some types of poultry that should not use straw as litter (turkeys). If you were able to obtain some wood shavings, show this to the members and ask them why they think wood shavings would be good to use as litter. Can they think of any disadvantages?

ADVANTAGES

- good absorbency
- does not compact like straw
- does not hold bacteria like wet straw does
- easily removed and spread for composting

DISADVANTAGES

- sometimes expensive
- not as readily available as straw

CONTROLLING CANNIBALISM (10 minutes) page 16

Explain what cannibalism is and how it is evident in flocks. The members should realize that cannibalism is a sign of stress.

They may relate to signs of stress in humans and give examples of situations that are stressful. They may then better understand that poultry also can become stressed.

DISEASE CONTROL (10 minutes) page 17

Explain to the members that sanitation is very important in any poultry operation. Diseases spread quickly and so producers must do everything possible to prevent any disease outbreak.

RECORD KEEPING (5 minutes) page 18

Discuss the importance of record keeping. Ask the members if they personally keep any kind of records. e.g. notes at school, bank books, timetables, etc.
Have the members discuss and make a chart of the items they think a poultry producer would record (purchases, sales, number of birds lost, cost of repairs). Using the sheets on pages 31-38 and items listed on the next page, have the members record the items provided for expenses.

FARM EXPENSES

April 30	chicks	$500.00
May 1	water bill	$365.39
May 3	bulk feed	$2621.32
May 7	electricity	$1609.29
May 9	Ace Trucking	$1727.00
May 15	Bell Canada	$315.96
May 26	Repairs - two fans	$212.51
May 27	labour costs	$1620.00
May 28	paint, nails	$286.21
May 29	valves for water lines	$146.00
May 31	mortgage payment	$1210.00

Use the above items and have members take turns recording them on the wall chart.

FARM EXPENSES & OTHER CASH OUTFLOW			FARM EXPENSES								
Date	Item	Cheq. No.	Mortgage	Poultry Purch.	Feed Purch.	Animal Health	Labour	Utilities	Shipping	Building & Equipment Purch. & Repairs	Other Expenses

For senior members, you could ask them to list the records they'd need to keep to determine profit/loss on a flock of one hundred broilers. Some answers could be: number purchased, number of deaths, cost of feed, utilities, medication, upkeep and payments on buildings, interest on loans, number sold, weights and price per kg, etc.

BEFORE THE NEXT MEETING (5 minutes) page 20

If the members are able to contact a local producer they may report what they learned about the producer's record-keeping system at the next meeting.

Encourage the members to continue working on their special activity.

JUDGE'S CORNER (Optional)

If possible have a class of fancy poultry available for the members to judge. Discuss what to look for.

- clean feathers, feet, beak
- feathers not broken
- good colouring
- comb and wattles bright red
- appropriate size for the breed

DIGGING DEEPER - OPTIONAL INFORMATION FOR SENIOR MEMBERS, Separate handout

This activity deals with the importance of promoting your product and fielding criticism about the way birds are grown or handled. The members may be encouraged to role play a situation where they may have to deal with an animal rights activist. Have two members pretend to be animal rightists who are on a farm tour of two of the other members' farm. The rightists are critical of confinement housing for poultry. Encourage the members to remain calm and answer their questions with honesty. Suggest that the members ask for the opinion of another producer, or to refer questions to the Ontario Farm Animal Council if they are faced with questions they can't answer.

Ontario Farm Animal Council
7195 Millcreek Drive
Mississauga, Ontario
L5N 4H1
(905) 821-3880

MEETING FOUR BORN IN A BARN

OBJECTIVES

1. To acquaint the members with the free range system.
2. To explain the laying cage system.
3. To explain the best locations for barns.
4. To have members become familiar with systems needed inside the barns.

PREPARATION AND EQUIPMENT

1. Borrow the video "Poultry Management", 25 minutes, available from the A.V. Library, Visual Communications Services, OMAFRA, 1 Stone Road West, Guelph, Ontario, N1G 4Y2 1-888-466-2372 extension 6-3682. This video looks at the various aspects of management, housing and feeding methods, the importance of lighting and ventilation, and health and sanitation systems.

2. Take a tour of several different barns in your area so members can see the different styles and locations of barns. Have the members discuss the features of each and decide which operation they liked the best. If possible, ask the poultry operators to explain their operations.

   If there is a "free range" system in your area, see if it would be possible to visit the farm. The members would be able to compare the free range operation with the caged operation.

3. As a judging activity, you or your youth leader may want to select four different pictures of poultry barns from among those brought by the members or from some of your own. Develop three or four sentences about each. You might want to add things like the following.

   1. This barn is located at the bottom of a hill.
   2. It has one four foot door on the north side and a walk in door on the east side.
   3. It has a huge pile of manure on the west side next to the barn.
   4. Only 4 windows are able to be opened to provide ventilation.

   This would probably be a barn placed at the bottom of a judging activity because of all the wrong things associated with it. The best barn would be clean, in good repair, in a good location for drainage, well cared for outside with adequate facilities. Relate the information to the judging criteria selected. This is a good activity for your youth leader to prepare.

IN A NUTSHELL

Roll Call	5 min.
Game	5 min.
Home on the Range	15 min.
Controlled or Confined Systems	15 min.
Location of Barns	20 min.
Before the Next Meeting	5 min.
	65 min.

Optional: Judge's Corner
Digging Deeper

ROLL CALL (5 minutes) page 21

What is the most important thing you have learned in this project?

GAME (5 minutes)

Divide the members into groups of three or four. Each group must have a paper and pencil. The object of this game is to have the members work together to transform one word into another. The beginning word and the one into which it is transformed must have the same number of letters and all the words must be legitimate English words - no inventive spellings allowed! Only one letter may be changed in each step. An example of transforming flour to bread is: flour, floor, flood, blood, brood, broad, bread.

The group that completes the transformation the quickest and using the fewest words is the winner.

Have the members transform "chick" to "fryer". Here is one solution but there could be others. Chick, check, cheek, creek, creed, freed, freer, fryer.

HOME ON THE RANGE (15 minutes) page 21

Most members will be familiar with the "free range" system, but they may be unfamiliar with the term used to describe it.

Begin by asking the members what method of housing they think farmers used many years ago before modern cages and barns came into use. Was this an effective way to house poultry? What were some of the advantages of this system? What were some of the disadvantages? If you have a flip chart available or a chalkboard, list some of the members' ideas.

CONTROLLED OR CONFINED SYSTEMS (15 minutes) page 22

Begin by asking the members why they think most producers use this system. What advantages does a cage system offer? If you are using a flip chart, list the members' answers and use it to compare the two systems.

LOCATION OF BARNS (20 minutes) page 23

Explain and describe broiler barns and layer barns to the members. Explain the importance of lighting and the manure systems that could be used.

Ask the members what they would include if they were constructing a new poultry barn. If there is enough time, have the members sketch their ideal barn and show the features they would install in it. Have several members show and describe their barn to the other members. This could also be done in small groups.

BEFORE THE NEXT MEETING (5 minutes) page 24

The next meeting will focus on a debate concerning animal rights issues in the poultry industry. Members may want to speak to a producer in the area to find out reactions to animal welfarists.

Members should also be encouraged to finish their special activities. There should also be a decision by this meeting as to what the Achievement Program will be.

JUDGE'S CORNER (Optional)

If you were able to put together a class of pictures of poultry barns, have the members judge the class and practice giving their reasons. Another possibility would be to select one barn and give members details on four operations. They would judge the class to determine which operation is most suitable for the barn selected. You may only want to have two or three members give their reasons. Explain to the members how you or your youth leader judged the class and give reasons.

DIGGING DEEPER - OPTIONAL INFORMATION FOR SENIORS, Separate handout

This information is included for senior members to better understand the quota systems for eggs, pullets and turkeys. Some of the regulations concerning the selling of quota are included as well.

MEETING FIVE ANIMAL WELFARE

OBJECTIVES

1. To emphasize the importance of good promotional campaigns in the poultry industry.
2. To give members an opportunity to work together as a team and organize their thoughts logically in the presentation of a debate.

PREPARATION AND EQUIPMENT

Become familiar with the material about debating included in this meeting. Make sure the members are also familiar with the procedures in debating. Emphasize that manners are extremely important in being an effective debater. No derogatory names are allowed and speaking confidently, sincerely and positively are objectives to aim for. Members usually enjoy debating and are able to put themselves into the "heat of the argument", so it is important that the leader maintains control. Follow the format and assume the duties of the chairperson. Have fun!

PROJECT COMPLETION

Read the note on page 30, this Guide. If you want members and parents/ guardians to complete the Project Summary sheet, copies should be given out at this meeting.

IN A NUTSHELL

Roll Call	5 min.
Debate	55 min.
Before the Next Meeting	5 min.
	65 min.

Optional: Digging Deeper

ROLL CALL (5 minutes) page 25

Name one misconception you think the public may have about poultry raising in Ontario.

1. Beak trimming is inhumane. It causes the chickens pain and they are unable to eat properly.
2. Most poultry farms are owned by large corporations.
3. Birds are fed drugs and medication which get passed on in eggs and meat.
4. Free range chickens are happier and healthier and their eggs are nutritionally better.

5. Chickens are raised in over-crowded barns.
6. Hens suffer in cages. They can't exercise, move, or act like chickens.

Members may answer a variety of responses. Try to get them to think of as many different answers as possible. This will get them to think of other ideas for their debate later in the meeting.

DEBATE (55 minutes) page 25

Go over the rules of a debate (page 27), and select teams. Explain to members your role as chairperson and how you will indicate when each side's speaking time is up.

BEFORE THE NEXT MEETING page 26

DIGGING DEEPER - OPTIONAL INFORMATION FOR SENIORS, Separate handout

Senior members who may have been involved in many other debates may want to think about the three cases heard by the Farm Practices Protection Board. The members should work together to come to a solution for the three cases. They can then compare their answers to these problems with how the board actually ruled.

CASE 1

The board ruled that belling cows was not a normal farm practice and the farmer agreed to put a fence across the area to prevent his cows from congregating near his neighbour's window.

CASE 2

This farmer was ordered to plant a cover crop to prevent the soil from blowing onto the neighbour's property. The board ruled that the farmer was not engaging in a normal farm practice.

CASE 3

The board ruled that the farmer must enclose his tractor in a shed and only run his tractor for a restricted number of hours so as not to disrupt the lives of the cottagers who lived nearby. The farmer could not afford to build a building over his tractor and he feared it would overheat if he was to do so. The farmer has since stopped growing pumpkins and squash because he was not able to irrigate these crops.

Discuss with the members the importance of establishing good rapport with neighbours in the farming industry.

MEETING SIX IT'S SHOWTIME!

OBJECTIVES

To encourage members in showing and grooming poultry.

PREPARATION AND EQUIPMENT

Information on Fitting and Showing is available for members. Order 4-H 1900 94 FSE through your OMAFRA contact.

There are many options for this meeting. It could be held during the regular meeting time frame, with demonstrations and perhaps some hands on practice. It could also be organized as a half-day clinic. You shouldn't need more than half a day, and then only if you have members who are showing fancy poultry. You may want to cover this information earlier in the project and make this Meeting Two or Three.

Conducting a half-day workshop is a major undertaking and requires the work of several people. Delegate responsibilities and.appoint committees to look after specified activities. Parents are a great resource and should be involved early on.

First, decide on the location of the meeting. A committee could help with any site preparation.

For members who will be showing their birds, you will need to have an experienced exhibitor to demonstrate the techniques of grooming. Experienced senior members can help here, too. If you have members who are showing dressed birds or eggs, you may want to give practical pointers on presentation and appearance.

Be sure to include a showmanship demonstration for everyone, regardless of what they are showing. If you have a show like this, be sure to make it very constructive by having the judge give tips to each member about his or her presentation. As leader you should follow up the judge's comments with some positive advice to your members about showing.

Be sure to have a crew assigned to clean up at the end of the event.

Senior members can be very helpful to Juniors with presentation, grooming and showing techniques.

IN A NUTSHELL

Roll Call	5 min.
Eggs-actly Right	20 min.
Showmanship of Dressed Poultry	20-40 min.
Showmanship of Fancy Poultry	20-40 min.
	65-105 min.

Optional: Digging Deeper

ROLL CALL (5 minutes)

Name one thing to remember when showing a chicken at a poultry show.

Members might include such things as making sure the bird is clean, showperson is wearing white, removing the chicken carefully from the cage, holding the chicken properly, etc.

EGGS-ACTLY RIGHT (20 minutes)

SHOWMANSHIP OF DRESSED POULTRY (20-40 min.)

SHOWMANSHIP OF FANCY POULTRY (20-40 min.)

BEFORE YOU GO

Make sure the members are aware of all the details for the Achievement Program.

DIGGING DEEPER - OPTIONAL INFORMATION FOR SENIORS, Separate handout

PROJECT COMPLETION

A Certificate of Completion and a Project Summary have been included in this Guide, pages 41-43. Your signature on either of these indicates you feel the member has completed the project to the best of his/her ability. Space is provided for you to add some individual comments to offer encouragement to the member. The Project Summary sheet also asks for written feedback from the member and his/her parents/guardians. (The questions on this sheet have been selected from the informal evaluation sentences, listed on the next page.) Select whichever sheet best meets your needs and make copies for the members.

It is recommended that the certificates not be awarded until the Achievement Program. If you give them out before this time, some members mistakenly assume that they don't need to participate in the program.

IT WORKED FOR US!

Your experience in leading this club would be helpful to another leader in your area. You are encouraged to make some comments about the project, what resources you discovered locally and the members' feelings about the project and pass this information on to your 4-H Association. The Resource Development Subcommittee of the Ontario 4-H Council is interested in your comments too. Their address is in your Leaders' Guide, page 5.

INFORMAL EVALUATION

If your members are not completing the project summary sheet, take a few minutes at the last meeting to do an informal evaluation with members. One way to do this is to ask them to complete one/all of the following sentences.

- I joined this club because ...
- I really enjoyed ...
- I didn't enjoy ...
- I had a hard time ...
- My favourite meeting activity was ...
- My least favourite meeting activity was ...
- If I was to take this project again, I would change ...
- I learned ...
- I've changed ...
- I'm glad ...

THANK YOU FOR BEING
A VOLUNTEER 4-H LEADER!

FARM EXPENSES

Date	Item	Cheq. No.	Mortgage	Poultry Purchases	Feed Purchases

Attach pages 35 + 37 + 39, together to form a wall chart.

Animal Health	Labour	Utilities	Shipping	Building & Equipment Purchases & Repairs	Other Expenses

PROJECT SUMMARY - POULTRY

(complete at the end of the project)

A. Member Comments:

1. I joined this club because ... _____

2. I really enjoyed ... _____

   I didn't enjoy ... _____

3. If I was to take this project again, I would change ... _____

4. I learned ... _____

5. I'm glad ... _____

B. Parent/Guardian Comments: _____

C. Leader Comments: _____

This project has been completed satisfactorily.

Member _____ Leader _____

Date _____ Leader _____

4-H Ontario

POULTRY
Housing and Management

Congratulations on successfully completing this 4-H project.

_____

_____

_____

_____

_____

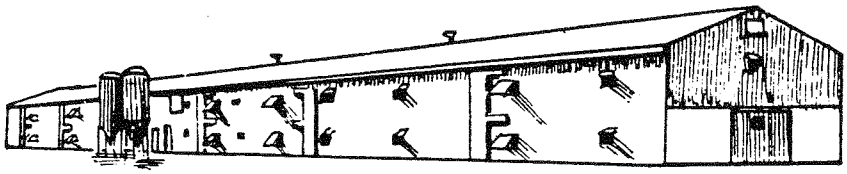
_____

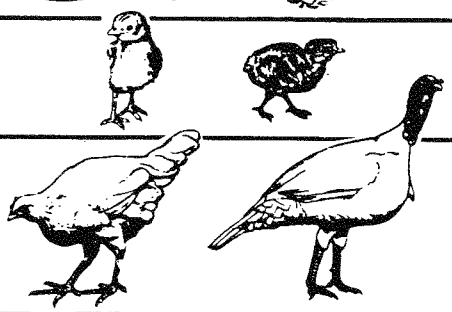
_____ _____

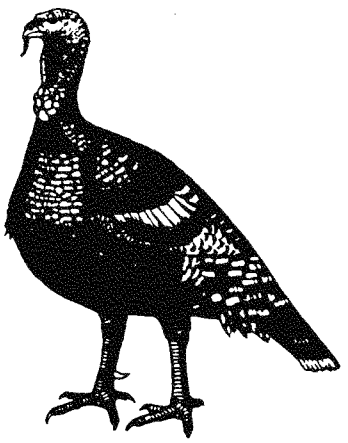
Date Club Leader's Signature

LEARN TO DO BY DOING

POULTRY
Housing and Management







NAME _____ AGE _____

CLUB _____ NUMBER OF CLUBS _____

Ontario 4-H Council

Ontario
Ministry of Agriculture, Food and Rural Affairs

4-H 1900 98 ME

The Ontario 4-H Program provides opportunities
for the personal development of youth.

THE 4-H PLEDGE

"I pledge:
My Head to clearer thinking
My Heart to greater loyalty
My Hands to larger service
My Health to better living
For my club, my community and my country."

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This project was originally prepared by
Bonnie Popov, Essex for the Ontario 4-H Council
and updated in 1997 by Diane Spratt.
Special thanks to the original advisory committee which included
Marilyn Charlton, 4-H Member; Robert Stinson,
4-H Leader, and OMAFRA staff.

This project was jointly funded by the Ontario 4-H Council and the Ontario Ministry of Agriculture, Food and Rural Affairs.

POULTM

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INTRODUCTION

Almost everyone likes poultry. It has become a versatile product with a market that continues to grow as new products are developed.

If you are considering raising chickens or other poultry, it is important that you learn about all the housing techniques you will need to keep birds healthy and growing.

OBJECTIVES

1. To find out about the proper housing for poultry.
2. To find out more about managing a poultry operation.
3. To have fun!

GENERAL REQUIREMENTS

A member will complete a project satisfactorily by:
1. participating in at least 2/3 of his/her own club meeting time;
2. completing the project requirements to the satisfaction of the club leader(s);
3. taking part in an Achievement Program.

SPECIAL ACTIVITIES

Individual clubs will decide if junior and/or senior members will be required to complete a special activity. If you will be doing a special activity here are some suggestions to get you thinking. If you have another idea that's great - just get it approved by your leader(s). Whatever the choice; display, present or share in some

way the results of your activity. This could be done at a club meeting, the Achievement Program or another 4-H event.

JUNIOR MEMBER ACTIVITY IDEAS

Junior members may choose from one of the following.
1. Keep a journal with entries for expenses, feed consumption, weight or egg production, health of the birds and any other information you want if you are raising a flock of birds.
2. If you aren't raising birds, or are only raising a few birds, design a poster about the characteristics of one breed of poultry.
3. Any other project that has been approved by the leaders.

SENIOR MEMBER ACTIVITY IDEAS

Suggestions for activities for senior members are listed here. These activities offer senior members (15 years and over) a chance to look more closely at an area of interest to them. **The emphasis is not on the report or on the final results, but on the activity and learning experience itself.** Members may pursue an activity idea of their own, and can work on the projects in pairs or small groups, if they wish.

1. Interview two commercial poultry farmers in the area. Prepare a report comparing the housing used in each instance.
2. Organize and present a debate on animal welfare and the poultry industry.
3. Prepare a photo collection or a video showing various types of poultry housing and management options.
4. Design a new poultry housing facility for your poultry operation including layout, equipment and costs.
5. Prepare a display on one topic covered in this project and present it at the Achievement Program.
6. Any other project that has been approved by the leaders.

MEETING SCHEDULE

	DATE	TIME	PLACE
MEETING ONE			
MEETING TWO			
MEETING THREE			
MEETING FOUR			
MEETING FIVE			
MEETING SIX			
ACHIEVEMENT PROGRAM			

FEEDBACK

The 4-H Resource Development Subcommittee of the Ontario 4-H Council reviews and evaluates 4-H resources. Comments and suggestions about 4-H manuals and guides are always welcome. They may be sent to the following address:

4-H Resource Development Subcommittee
Ontario 4-H Council
R.R. #1 Thornloe, Ontario P0J 1S0
1-800-937-5161.
E-mail: lduke@ntl.sympatico.ca
http://www.4-Hontario.ca

CAUTION

Farm visitors can spread diseases within a farm and among farms. People spread contaminated material directly on footwear, hands and clothing.

Farm families hosting a 4-H meeting should ask visitors to comply with certain precautions to protect their livestock. These may include the use of a sanitary footbath or wearing plastic disposable boots and clean coveralls. As a courtesy, 4-H members should arrive at the host farm with freshly laundered clothes and clean rubber boots. Upon returning home, 4-H members should change to different clothes and boots before entering their barn.

Remember, some diseases are spread very easily. Animal welfare, pride in stockmanship and peace of mind are reasons to prevent spread of diseases. The cost associated with a disease outbreak are another.

GLOSSARY

COMMON POULTRY WORDS

Abdomen	-	area between the keel and pubic bones
Barring	-	alternate strips of light and dark across a feather
Beak	-	upper and lower parts of the mouth of chickens, turkey, etc.
Beard	-	growth or wiry hairs on the front portion of the breast of a male turkey
Bill	-	upper and lower parts of the mouth of waterfowl
Breast	-	the forward part of the body between the neck and the keel bone
Breed	-	a group of fowl related by ancestry and breeding. Birds of a breed all show certain characteristics such as body shape and size.
Broiler	-	usually a young chicken 6 to 7 weeks of age or sometimes a young turkey processed for meat
Broody	-	maternal instinct causing the female to want to hatch eggs
Class	-	the specified geographic area from which certain breeds of chicken originated. For example, the White Leghorn belongs to the Mediterranean Class.
Cockerel	-	a male chicken less than 12 months of age
Comb	-	the fleshy part on top of the head of chickens, usually a reddish color
Down	-	the soft, fine, fluffy covering of young birds. Down feathers may also be present on adult birds.
Drake	-	a male duck
Dressed	-	slaughtered bird with feathers removed
Duck	-	female duck
Duckling	-	young duck of either sex
Eviscerated	-	slaughtered bird with feather, head, feet, and inner organs (viscera) removed
Finish	-	relates to the meat quality of a dressed or eviscerated bird
Fleshing	-	the meatiness of a bird, the ratio of meat to bone
Gander	-	male goose
Germ	-	developing embryo inside an egg

Goose	-	female goose
Gosling	-	young goose of either sex
Hackle	-	plumage on side and rear of the neck
Hen	-	a female chicken more than 19 weeks old
Hock	-	the joint of the leg between the lower thigh and the shank
Keel	-	the breast bone
Keet	-	a young guinea fowl
Molt	-	to shed old feathers and grow new ones
Oil sac	-	large oil gland (preen gland) on the base of the tail used to preen or condition the feathers
Pipping	-	what a chick does as it breaks through the shell to hatch
Poult	-	a young turkey
Primaries	-	the long, stiff flight feathers on the outermost half of the wing
Pubic Bone	-	thin posterior portion of the hip bones that forms part of the pelvis
Pullet	-	female chicken less than 19 weeks old
Roaster	-	chickens of either sex, older than 10 weeks of age, grown for a large meat bird
Saddle	-	the upper back portion of the bird, just before the tail section
Secondaries	-	the large wing feathers adjacent to the body
Shank	-	the leg portion from the toes to the hocks
Sickles	-	the long, curved tail feathers of the rooster
Spur	-	the stiff, horny growth on the inside of the shank of older poultry, more pronounced in males
Thighs	-	the feathered parts of the legs between the hock and where the leg joins with the body
Tom	-	a male turkey
Variety	-	subdivision of a breed distinguished either by plumage color, plumage pattern or comb type
Vent	-	excretory or fecal opening at the tail area of birds
Wattles	-	the thin, fleshy skin at either side of the base of the beak and upper throat
Web Foot	-	thin, rubbery layer of skin between the toes of waterfowl

Be willing to let your name stand for an executive position. It is a rewarding and fun experience. Following your club's elections, complete this club executive chart.

CLUB EXECUTIVE:

	Name	Phone
PRESIDENT	_____	_____
VICE-PRESIDENT	_____	_____
SECRETARY	_____	_____
TREASURER	_____	_____
PRESS REPORTER	_____	_____
OTHER	_____	_____

CLUB MEMBERSHIP:

Members, Phone	Members, Phone
_____	_____
_____	_____
_____	_____
_____	_____
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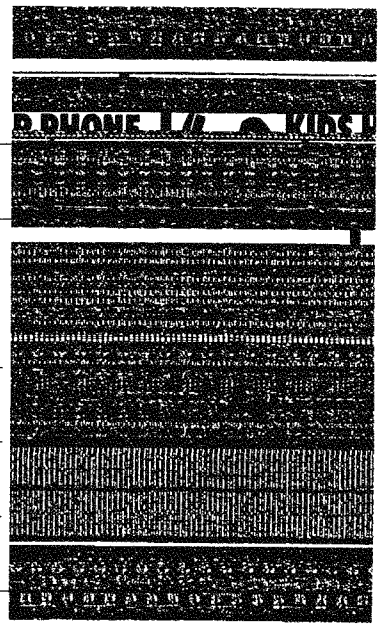


Leaders, Phone	Leaders, Phone
_____	_____
_____	_____

OMAFRA Contact, Phone	4-H Association Contact, Phone
_____	_____

Eat, Drink and Grow

ROLL CALL

If you were allowed to have only one kind of food and one kind of drink for a whole week, what would you choose?

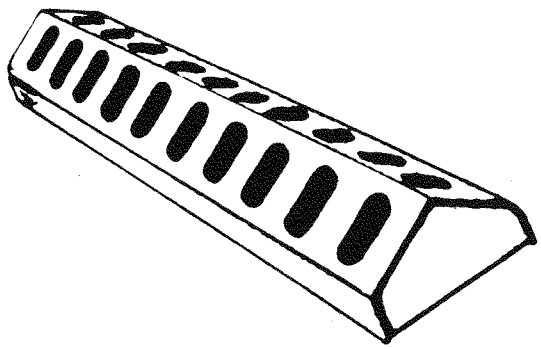
****

LET'S EAT!

Remember the last time someone encouraged you to clean up your plate and drink all your milk at supper? Obviously, he or she was concerned about your health and also knew that wasting food is expensive!

The same is true when feeding poultry. Producers must be extremely cost-efficient in today's market in order to make a profit. Wasting food is like throwing money away, so poultry producers use feeding systems designed to provide their flocks with only the amount of feed necessary for maximum production.

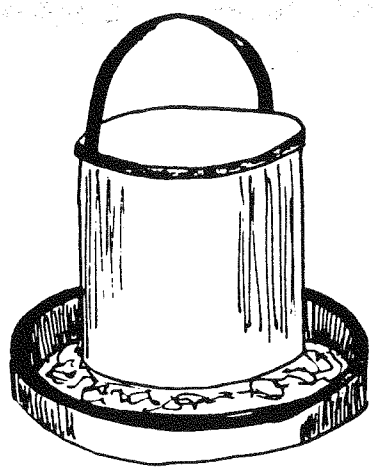
Feed represents about 50% of the cost of producing broilers. The amount of feed consumed increases steadily as the birds grow, so it is important that enough feed is available at all times. The feed is put into feeders so birds can't spill or waste it.



The feeders designed for chicks are placed directly on the floor and are covered by tops with holes big enough for the chicks to peck and eat. The feed must be covered since the chicks walk on the feeders.

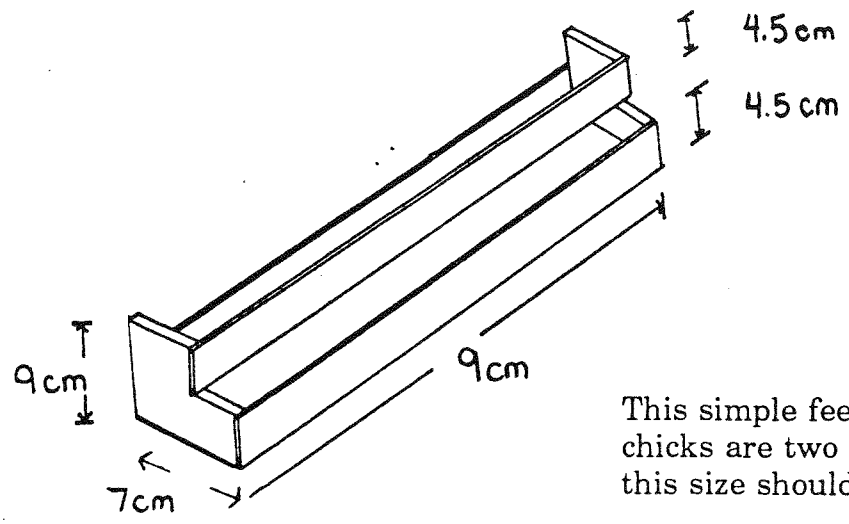
A 5 day old chick eats 22 grams of feed per day, and by 10 days of age, the chick is eating 40 grams. By 21 days, the chick is consuming 87 grams of food daily.

Because chicks grow rapidly, the feeders must be adjusted weekly. A circular type feeder can accommodate more chicks at any age than a trough type feeder.



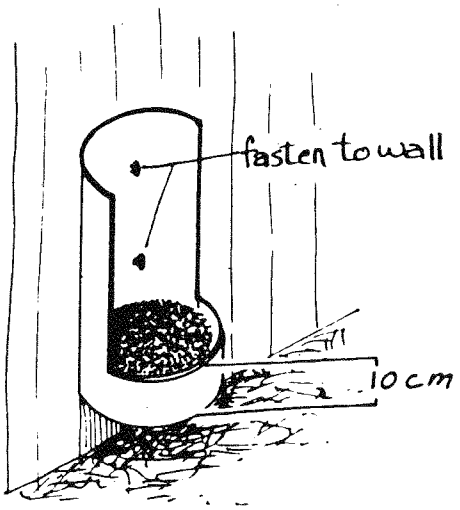
Galvanised tube feeders will feed 25 birds comfortably. The feed is put in the top and flows out through the grille at the base. It can be hung from the ceiling and should be about 2.5 cm above the level of the bird's back.

Mechanical feeders suspended from the ceiling can be raised as the chicks grow. It is important that all feeders be accessible. **Feeders should be no further than 3 meters away from any bird in the pen.**



This simple feeder can be used until chicks are two or three weeks old. One this size should feed about 50 chicks.

If you have only a few chicks, you can make your own feeder by using a 1.36 litre juice can. About 10 cm from the bottom of the can, cut a semi-circle half way around the can. Then from the open top, cut down the sides to meet your cuts at the bottom. Fasten your feeder to a wall, being careful that the chicks can easily reach the feed.



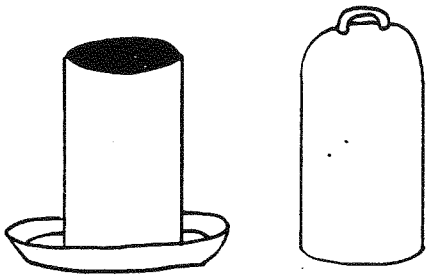
DRINK UP!

Water accounts for more than half of a bird's bodyweight and helps it control body temperature. Like humans, poultry require more water as the temperature outside increases. It is **important that the birds have a constant supply of fresh water** because they need to drink freely and often. Chickens will begin to molt after 3 days without water. Water is also the key to proper digestion to maintain healthy birds.

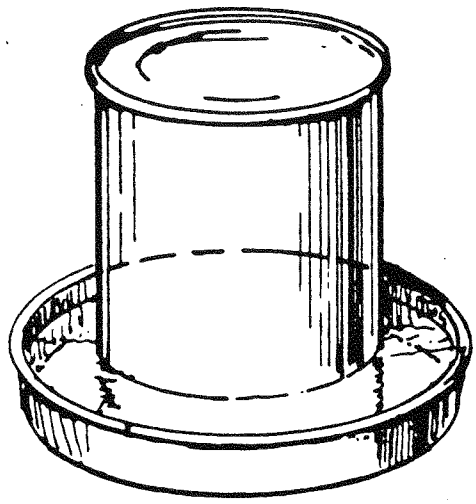
For each kilogram of food eaten, a chicken drinks 1 to 1.4 litres of water. This means it drinks twice as much as it eats!

A flock of 10,000 birds needs 1840 litres of water per day up to the age of 12 weeks. The same size flock of mature laying hens needs approximately 2520 litres of water daily to maintain egg production.

Hand-type waterers are used for watering chicks in the first few days. Satellite plate-type waterers are also available. These waterers are laid out in a series connected to each other, and the main water source, by flexible hoses.



The sleeve (right) slips over the filled tank, pressing a trigger which allows the water to flow into the watering pan. The water level is controlled by the vacuum created.



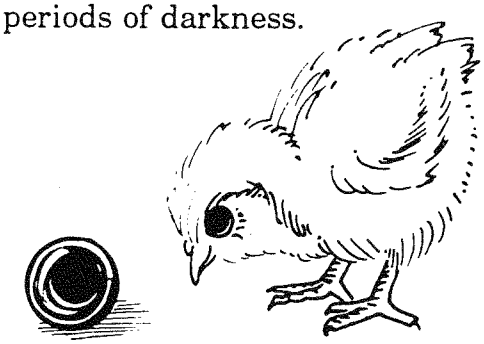
You can make your own hand waterer using a 4 litre, clean can and a round, shallow dish.

Nipple-type waterers can be used after birds outgrow the hand-type waterers. The birds learn to drink from the nipples.

There are several styles of **automatic watering systems** available. Trough-type and circular waters are used in many operations. You must make sure that there is enough waterer space for each bird. If a trough-type waterer is used, allow 1 centimetre per bird, counting both sides.

Some poultry operators use solenoid valves on the water lines, which are controlled by the time clocks that regulate the lights. A solenoid valve is an electrically powered water shut-off valve. It is similar to the valves used in washing machines and dishwashers that turn the water on and off automatically. This system can be used so that the water is shut off when the lights are turned off, thus preventing flooding of pens or cages during periods of darkness.

For pheasant chicks and turkey poults, be sure to put colored marbles or stones in the waterers. These attract the chicks to the water. Unlike chickens, these birds need help locating the water.



BEFORE THE NEXT MEETING

1. Think about what kind of birds you might like to raise.

2. If you are a senior member, read over the list of suggested activity ideas and think about what you might choose. If you have other ideas, discuss them with your leader.

JUDGE'S CORNER (OPTIONAL)

Every time you go to a store to buy something, you are involved in a judging activity. It may be that you need new shoes and the store has a large variety to choose from. Before you arrive at the store, you have made up your mind that you want to buy running shoes. Now, what color? Will you buy leather? Will you get high tops? What brand? What price range? What style? What will be the best value for your money?

There are many questions that you have to answer before you buy your shoes. How will you determine which shoes are the best for you?

You first choose three or four pairs that you like and eliminate the others. In order to do this, you have to decide which shoes are the best value for your money. This means that you judge the shoes by the same standards.

When you have chosen the pair of shoes that you are going to buy, you will have many reasons why you chose that pair.

We do the same thing in 4-H. We learn to judge a class of four different items according to our needs. When we have chosen which one is best, second best, third best and which item is the least suitable, we can give reasons why we chose them in that order.

Being able to judge things is very important. Every time we buy something we go through a judging activity. We also judge apartments, homes, cars, and careers all through our lives.

Throughout this project you will have the opportunity to sharpen your judging skills. Take up the challenge!

Environmentally Happy

ROLL CALL

What type of feeder and waterer would you choose for someone raising 25 birds as a 4-H project?

****

Housing for chicks, turkeys, broilers or egg production may be very different in size, appearance and arrangement of facilities. However, any operation requires a well-insulated building equipped with a proper ventilation and heating system.

WHEN IT'S COLD OUTSIDE

A **heating system** is necessary for brooding young poultry and to warm cold air brought into the barn in the winter.

The choice of the system depends upon:

- the cost and the availability of equipment
- the cost of the energy available
- the insurance costs based on the chosen heating system.

Types of heating equipment used by the poultry industry include:

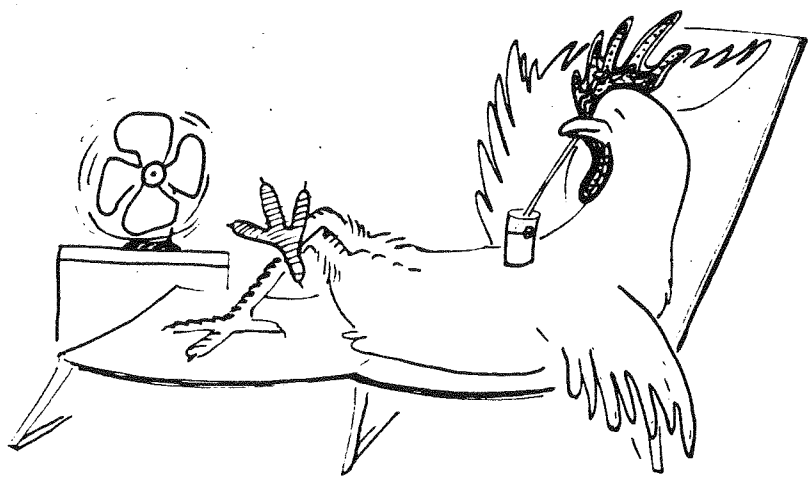
- oil-fired or electrically heated hot water systems
- electric radiant heaters for brooding
- propane or natural gas brooders.

TURN UP THE AIR

A caged layer eating a normal ration and laying an egg daily will produce about 180 kilocalories of heat every day. So, 10,000 layers will produce as much heat in a day as a furnace burning 231 litres of fuel oil!

This means that on a warm summer day, a ventilation failure could result in a temperature increase of 16°C in one hour within the building.

When a hen is in a very warm environment (28-35°C) she must work hard at losing the heat she produces. To do this, she raises and spreads her wings and moves away from the other birds.



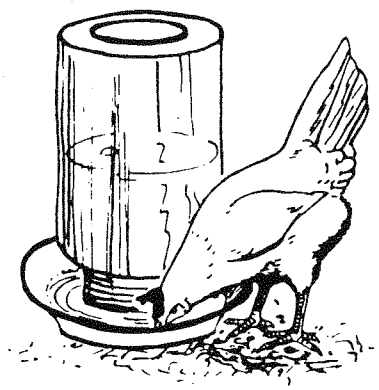
Despite her attempts to lose heat, most of her heat will actually be lost by evaporation. The evaporation of body water removes a great deal of heat and so it is an effective way for her to keep cool.

Since the hen does not have sweat glands, she pants similar to a dog. The hen can easily increase her respiration rate to 10 times the normal rate and also begins throat fluttering to help in evaporation. This throat flutter moves air in and out of the throat area and increases evaporation without the hen actually breathing in the air.

During a hot dry day, this is very efficient, but on a hot and humid day the hen must pant more to keep cool. This evaporation means that a supply of clean fresh water is vital, or the hen may die.

When a hen is in a comfortable environment (21-25°C) she will lose most of that heat in three ways.

1. **Conduction** - Heat leaves her body when the hen touches a surface cooler than her own temperature, like the floor of the cage or the sides of a cool waterer. Some producers run cold water through the roosts the birds sit on. The bird's heat is lost to the air around her.
2. **Convection** - Cooler air, moving through the barn, carries heat from her body.
3. **Radiation** - In this process heat moves from a warmer surface to a cooler surface without going through something else. Heat flows to the earth from the sun by radiation. Likewise, heat from the hen's body will rise into the air around her.



Proper ventilation in a barn does the following:
- removes moisture-filled air,
- brings in an equal amount of outside air,
- moves the air coming in evenly to all areas,
- keeps inside air moving to flush hot, moist air from among the birds.

HEAT STRESS

A heat stress problem can occur any time during the year if the ventilation system fails. Laying hens continually adjust their feed intake according to the environmental temperature.

In winter, when large fans are covered, and outside doors on air intakes are closed, it is important to ensure that there is enough back-up or emergency fan capacity to cool the barn. An equipment failure is just as serious in winter as in summer.

When the barn temperature rises above 27°C, the hen's body temperature begins to rise and she eats much less. As eating declines, the egg weight declines. This seems to be due to the smaller amount of protein eaten at higher temperatures. When temperatures rise above 32°C, the number of eggs laid will also decline, since the hen is not eating enough nutrients to continue to lay normally.

SYMPTOMS OF HEAT STRESS

1. panting
2. stretched-out neck
3. raised wings
4. decreased activity
5. death

The most frequent result of heat stress is a decline in shell quality. As the hen pants to keep cool, excess carbon dioxide is exhaled. This causes the blood to become more alkaline and reduces its ability to hold and carry calcium for shell formation.

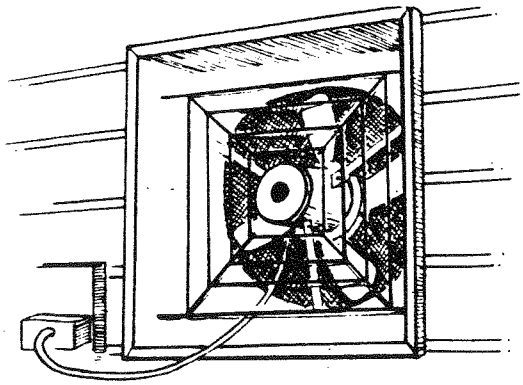
Because the birds drink more, the moisture content of their droppings will increase as well in hot weather. This can cause increased soiling of egg shells and difficulties in handling and storage of manure, because it is very wet.

The immune system of the bird is also affected by heat stress, so **vaccinations should not be given in very hot weather.** When birds are under stress, their resistance to disease is lowered. Just as doctors do not give us vaccines when we have a cold, poultry vaccinations are not given in times of stress.

VENTILATION SYSTEMS

The main functions of ventilation are:

- to maintain oxygen
- keep carbon dioxide levels low
- remove dust, moisture and ammonia from the building
- maintain suitable temperatures.



Most ventilation systems work either by negative or positive pressure. In the **negative pressure system**, exhaust fans force out air that has been drawn into the barn through vents usually located in the opposite wall.

The **positive pressure system** uses fans to force air into the barn, and air escapes through ventilation openings. This makes it easy to filter the incoming air.

It is important to have a system that provides uniform air change without drafts. You should have an emergency power supply so you can operate the ventilation fans in case of a power failure.

BEFORE THE NEXT MEETING

1. If doing a special activity, begin working on it.

2. Check agricultural papers and magazines for examples of poultry barns. Bring them to the Home Sweet Home meeting.

3. If you plan to raise chicks, make arrangements.

JUDGE'S CORNER (OPTIONAL)

Judging poultry equipment is an important part of being a poultry producer. Good equipment choices help the farmer to use energy and resources wisely.

There are many different feeders, waterers, light and ventilation systems, heating systems, and barns to choose from. The poultry producer must evaluate each item carefully. The features and costs must be calculated. It is important for the producer to judge each piece of equipment before purchasing it.

Home Sweet Home

ROLL CALL

What is your favorite breed of poultry?
****

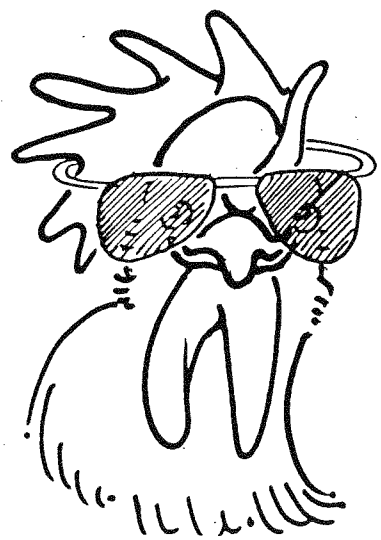
We all enjoy living in comfortable homes with adequate heat, light and facilities. Poultry also thrive best in clean and pleasant surroundings.

LIGHTING

Different lighting programs are used depending upon the type of poultry being raised.

Broilers can be grown under continuous light from chicks to market age. This lighting method can be hazardous since the flock could panic if all the lights go off in a power failure. It is a good practice, to shut off the lights for at least 1 hour each day, so they'll become used to darkness.

Incandescent bulbs are considered superior to other light sources because they give off soft light. Too bright white light may be a cause of feather picking which can lead to cannibalism. It is important to be able to dim lights, yet provide enough light for the birds to find their feed and water. The dimming of fluorescent lights is possible, however it is currently expensive to buy the necessary hardware. New compact fluorescent bulbs are being developed and may soon be in use in poultry barns.



In egg production, the amount of light that the pullet receives affects when she begins laying eggs, and that in turn affects the size of the eggs she lays.

Lighting also has an effect on mature body weight and feed consumption. Lights must be evenly placed throughout the barn for consistent egg production.

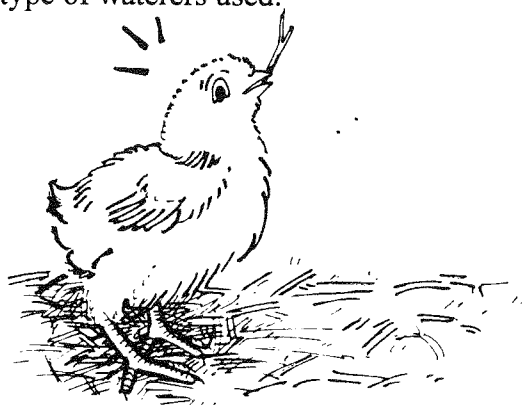
RELATIVE HUMIDITY

Relative humidity is the **amount of water vapor in the air.** It affects performance of birds, just as light does. Optimum humidity levels reduce dust and promote better feathering and growth. A relative humidity of 60 to 70% appears to be best.

LITTER

In broiler pens and fancy bird pens, the floor is usually covered with 5 to 7 cm of high quality planer untreated wood shavings. This is called litter. **Litter is necessary to absorb the moisture of the birds' droppings.** It is possible to use sawdust or chopped straw or hay, however, the litter must not contain any foreign material such as nails or wood preservatives. As well, the litter must be free of any dust and molds.

During the growing period, the condition of the litter is affected by temperature, ventilation, and the type of waterers used.



Do not use chopped straw or hay as litter for turkey poults as the birds will try to eat it, causing choking and death.

CONTROLLING CANNIBALISM

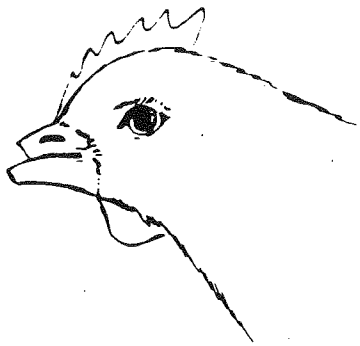
Cannibalism can become a serious problem in a poultry flock. Birds may begin pecking each other, causing bleeding. It usually begins by birds picking tail feathers, toes and vents. It eventually progresses to other body parts and can lead to death.

Cannibalism is caused by a combination of stress conditions.

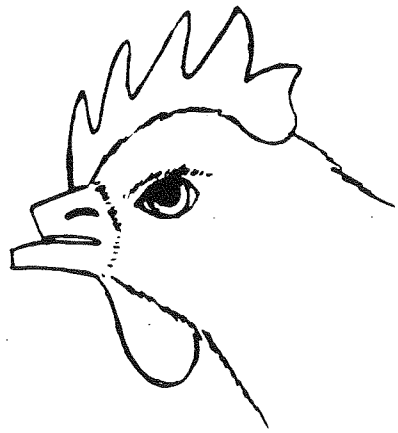
The most common causes are:

- overcrowding
- lights are too bright
- ventilation is poor
- overheating
- not enough feeder and waterer space
- poor feed
- being without water and feed for too long a time.

Once cannibalism has started in a flock, it is hard to control. Beak trimming of the birds may sometimes be necessary.



Properly beak trimmed pullet



Properly beak trimmed adult bird

DISEASE CONTROL

Broiler barns should be kept locked, and **only the people looking after the birds should enter the barn.** Anyone entering the barn should step through a disinfectant foot bath. The disinfectant in the foot bath should be changed daily.

Ventilation openings and drains should be screened to keep out rats, mice and wild birds.

The yard around the barn should be kept clean and tidy. Piles of manure and other debris are a home for disease organisms, rats and mice.

When a bird dies for unknown reasons, it should be examined by a laboratory.

DISPOSING OF DEAD BIRDS

Dead birds can be **deeply buried, rendered or composted,** to prevent insects, dogs, cats and wild birds from spreading disease to other farms. Composting is a natural breakdown of organic sources such as dead poultry and litter in the presence of micro-organisms. Whole chickens can be composted entirely, except for a few bone fragments and feathers, within 3 weeks.

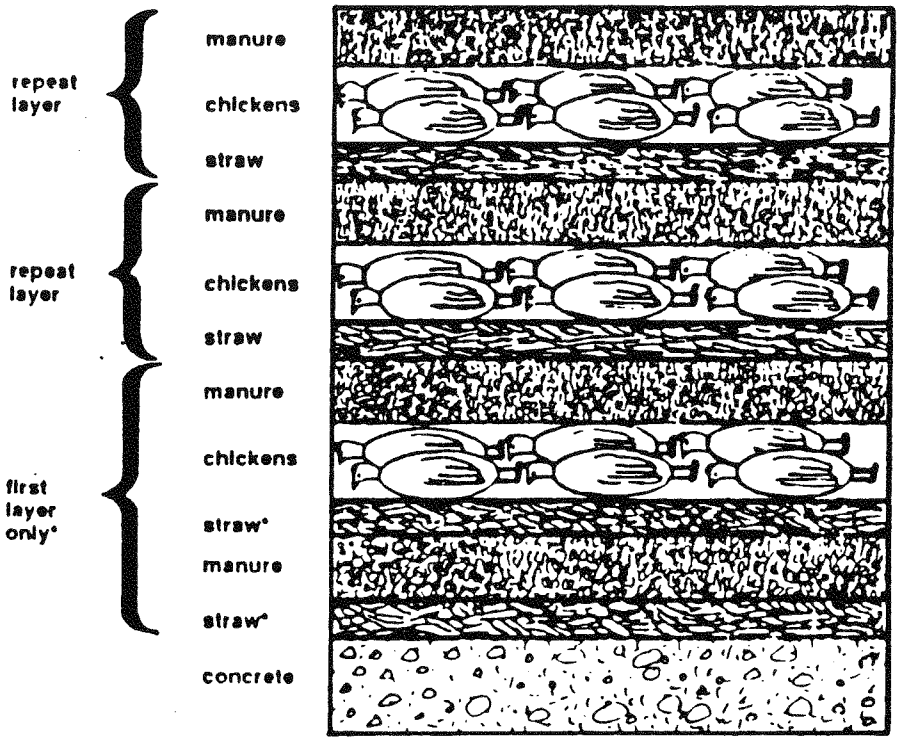
For composting to work, 3 things must be present:

- a nitrogen source (the birds + manure)
- a carbon source (straw, leaves, shavings)
- micro-organisms that require oxygen.

When all three parts are combined, a heat above 60°C develops and the birds decompose into water, nitrogen, carbon dioxide and carbon. **Since the compost**

pile reaches a very high temperature, it will destroy disease causing organisms. This is therefore a good clean method of disposing of dead birds. The final product can be used as fertilizer for crops. This is a new process that may become important in the future as an economical method of bird disposal that is also environmentally-friendly!

Composter Bin

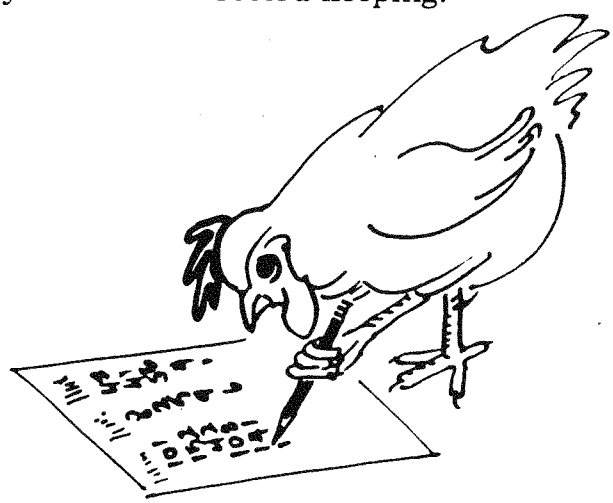


Put a double layer of straw at bottom of bin. 182 kg of dead chickens require about 273 kg manure and 18 kg (approximately 1 bale) of straw to compost.

RECORD KEEPING

Proper management of the poultry barn is important to make sure the birds will thrive. Many management decisions rely on accurate record keeping.

Just as in any other industry, accurate and detailed records are needed in poultry operations. Many poultry producers now use computer programs to enter their data and determine their efficiency. Records must be kept on the cost of chicks, feed, energy, housing, marketing and related expenses. **The most profitable poultry operations are those that keep accurate records.**



Here are some examples of the types of records a poultry producer would keep.

FARM EXPENSES & OTHER CASH OUTFLOW			FARM EXPENSES								
Date	Item	Cheq. No.	Mortgage	Poultry Purch.	Feed Purch.	Animal Health	Labor	Utilities	Shipping	Building & Equipment Purch. & Repairs	Other Expenses

INVENTORY OF POULTRY

					Beginning Inventory
Type of Poultry	# Birds	Average Weight	Total Weight	Average Value	Total Value
Total Beg. Inv.					Total (a)
Purchases					
Born					
Total Sources					

					Ending Inventory
Type of Poultry	# Birds	Average Weight	Total Weight	Average Value	Total Value
Total End. Inv.					Total (b)
Sales					
Died					Change in Inventory Value (b-a)
Total Dispositions					Total (b)
					Less Total (a)
					Inventory Change for all Poultry

An example of a type of inventory record keeping for one year.

BEFORE THE NEXT MEETING

1. If doing a special activity, continue working on it.

2. Contact a local poultry producer and ask what type of record keeping is used in the operation. Report back to the club on what you found out.

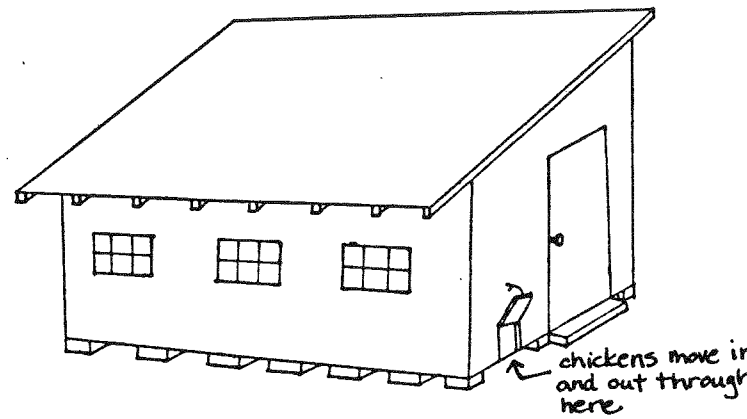
Born In a Barn

ROLL CALL

What is the most important thing you have learned so far in the project?
****

HOME ON THE RANGE

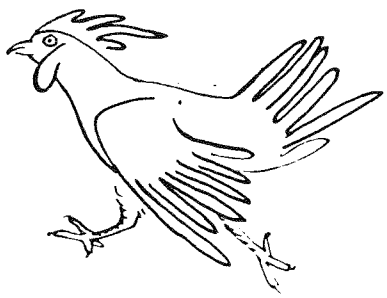
In a **free range system,** the birds move outside the barn during daylight hours, and pick up available food plus receive additional prepared feed. If the birds are layers, housing for the laying of the eggs and sleeping is provided and is usually a barn or a shed. This system is **more attractive to the human eye** since the birds can exhibit such behaviors as scratching and dust bathing in the dirt.

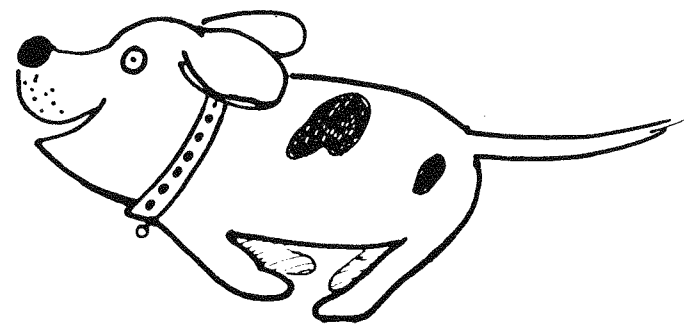


Possible free-range shelter

When the chickens are free range, the **stronger birds may bully weaker or younger birds**, which can cause feather picking and cannibalism. Also, **disease and parasites are more prevalent** when birds live on the ground. Hens will panic if they are frightened, and they could crowd together, causing injury and suffocation. In a free range system laying hens can easily damage eggs and the eggs come in contact with droppings and dirt. This **reduces the egg quality,** and **increases the chance of disease contamination.**

The hens do have the **greatest freedom of movement** in the free range system, but they are **not protected from predators or bad weather.** With this system, it is also **impossible to control the diet** of the hen.



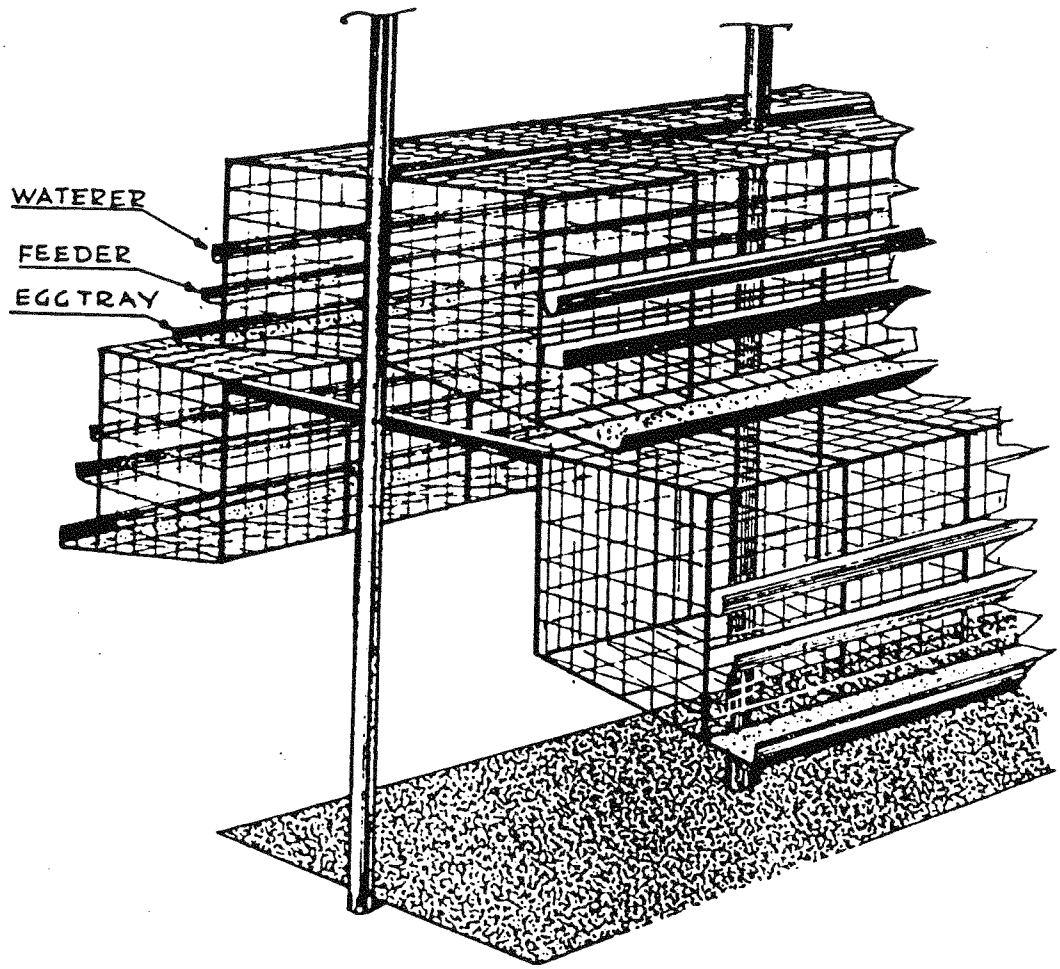


Free range turkeys may drown in the rain if they are not taken back into the barn. They may also die in periods of extreme heat if left outdoors.

The ground used by the birds may also become "fowl sick". The ground can become contaminated with organisms which cause or carry disease and could harm the health of the poultry.

CONTROLLED OR CONFINED SYSTEMS

All commercial egg producing farms use either a cage or floor system. **Over 90% of all eggs produced in Ontario are produced by hens in cages.** The cage system is popular because it gives the producer a lot of control over the birds' environment. It also allows for chores such as feeding, watering, egg collection and manure removal to be mechanized.



A Double-tiered Laying Cage System

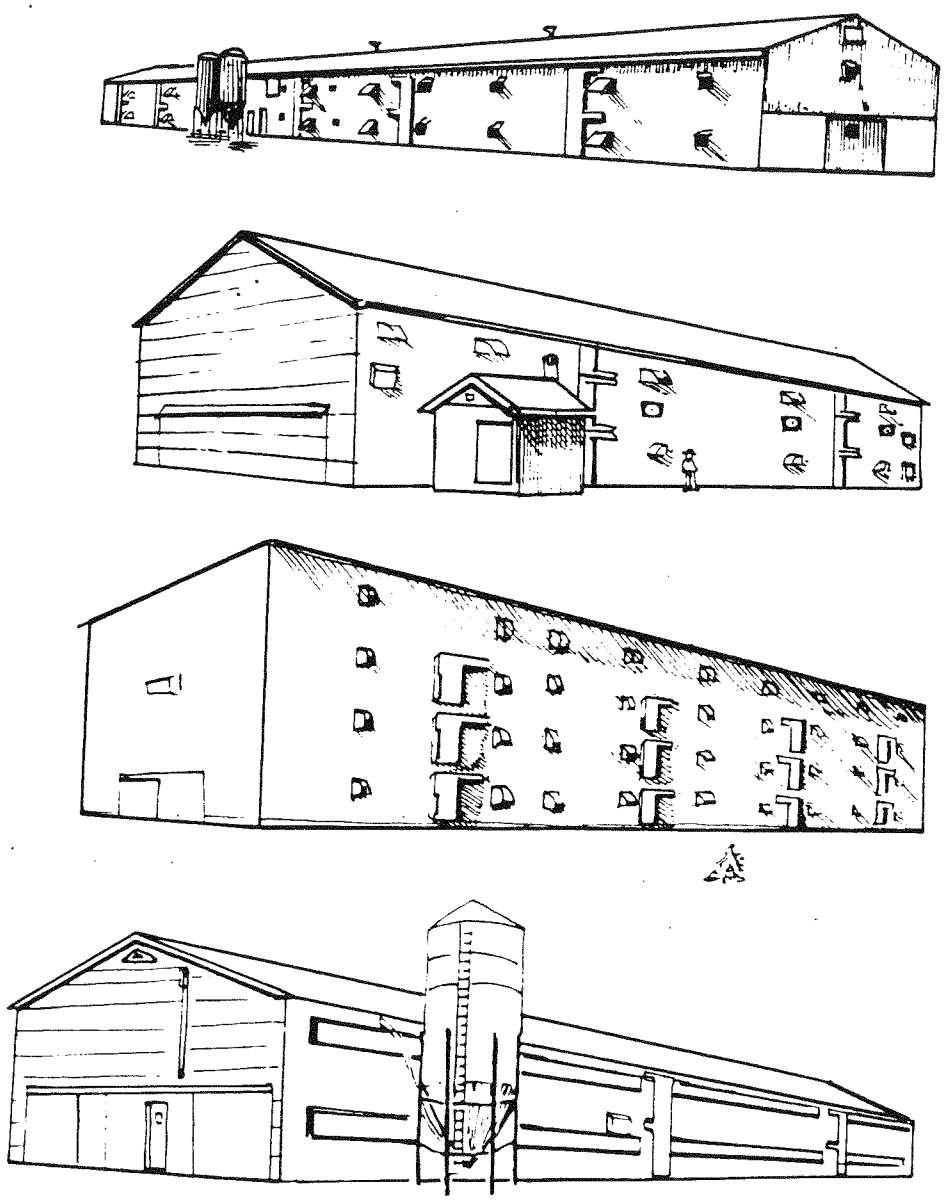
The typical laying cage system consists of several rows of multi-tiered cages. Each is designed to hold 3 to 6 birds. The cages are made of either plastic or metal and have sloping mesh floors so the eggs roll to the front of the cage out of the reach of the birds. Droppings pass through the mesh floors onto conveyor belts to the floor of the barn or into a pit to be removed later.

Broiler birds are raised on the floor with litter.

LOCATION OF BARNS

Poultry barns should be on **well-drained** land with an **adequate clean water supply** available. There should be **easy access** for trucks delivering feed or picking up birds or eggs for market. Loading areas should also be **well lit.**

Most broiler barns are windowless and have metal sheeting on the outside walls and roof. They are usually up to 92 m long and about 12 m wide and have a truss-type roof. They can be insulated with a rigid-type insulation material which is covered with plywood to keep chicks from pecking and destroying the insulation.



Poultry barns used for growing either chicken or turkey broilers.

A separate furnace building reduces fire hazards and helps prevent the spread of disease.

A **stand-by generator** is valuable during power failures to maintain ventilation and lighting. Lighting is ideally controlled by wall switches. Time clocks control automated feeding.

For caged layers, ceiling lights are installed on the aisles between the double-tier cages every 3.6 m, and for triple-tiered cages every 3 m. The barn should be easily accessible at each end of the cage rows. The aisles between the cages should be not less than 75 cm wide so the birds can easily be moved in and out.

The manure system must suit the flock. Wet poultry manure produces a strong, offensive odor. However, the odor from dry poultry manure is very slight.

Poultry droppings are 80% moisture. If a dry manure program is followed, it must be dried to 50% moisture. Dry manure is used for fertilizing fields or it can be stored in an open pit on a well drained site provided there is adequate bedding material in it.

If a wet manure system is used, then a liquid manure storage tank will be installed and water will be added to the manure so that the manure can be pumped out.

The cage doors should be at least 21 cm wide and 26 cm high, so birds can be put in and taken out safely. Also make sure there are no sharp or rough edges around the door openings.

BEFORE THE NEXT MEETING

1. If doing a special activity, continue working on it.

2. Think about what you would like to do for the Achievement Program.

3. In the next meeting you will take part in a debate about animal housing issues. If you have the opportunity, ask a poultry producer for suggestions on what he/she thinks is the best way to raise birds and why.

Animal Welfare

ROLL CALL

Name one misconception or misunderstanding you think the public may have about poultry raising in Ontario.

****

Increasingly, poultry producers are having to defend their production practices to the public.

Members of animal rights groups are becoming more vocal about the housing and management practices in the poultry industry. **It is important that producers present the positive benefits** of such practices as tiered caging of laying hens.

Laying cages will soon be banned in Switzerland and Denmark. In Britain, there are strict handling rules on how a chicken must be removed from a cage. These changes are a direct result of lobbying by animal welfarists, and of an increasing public interest in how their food is grown.

One way to emphasize the importance of this issue, and give everyone an opportunity to think about the arguments on both sides, is to hold a debate.

A debate is a contest to determine through formal argument who has the more convincing points. The object of a debate is to decide which team shows greater skill in arguing a resolution or statement. It is not to determine the truth of the resolution being debated. An effective debater can debate either side of a resolution. For example, "Cheerleading should be banned from all schools" is a resolution, or "School days should be lengthened from 8 am to 4 pm."

A good debater is able to organize material, to analyze the points made by the opposing team and to speak convincingly. There are two teams who take part in a debate. One team will take the affirmative. In other words, one team will try to convince everyone that the resolution is true. The other team will argue for the negative. They will try to show that the resolution is not true and they will organize their arguments opposing the statement.

Throughout this project, various practices in the poultry industry have been discussed. These include continuous lighting, beak trimming, tiered cages, confinement systems as opposed to free range, and litter control. Keeping in mind these practices, organize two teams of four members each and debate one of the following resolutions, or make up a resolution of your own to debate.

Resolutions:

1. Beak trimming should be banned in the poultry industry.

2. Poultry barns should be restricted to only one level of cages instead of tiered cages.

3. All poultry should be raised by the free range system where birds can move freely outside.

BEFORE THE NEXT MEETING

1. If doing a special activity, complete it.

2. Decide what you will be doing for your Achievement Program.

THERE'S MORE TO DEBATING THAN ARGUMENT

Primarily a debate is a contest where people attempt, through formal argument, to determine who is right. **The object is not to determine the truth of the resolution being discussed, but rather it is to decide which of the two teams shows greater skill in debating.** Those skills show the ability to organize material, to analyze, and to speak clearly and convincingly.

Briefly, a debate is organized with two teams of two people, a chairman, a timekeeper, and a set of judges. The teams argue about a resolution which is presented as a positive statement. Example: Resolved that the moon is the ideal place for honeymooners. The team which supports the resolution is called the affirmative. The opposing team is the negative side.

FORMAT

The chairman introduces subject and debaters.

The first affirmative team member speaks five minutes with a warning at four minutes. The opening of the debate is to define the terms of the topic as the affirmative understands them. The member should continue to make whatever points he/she feels supports the resolution.

The first negative team member asks one question. Affirmative has one minute of preparation time and one minute to present an answer.

The first negative team member speaks five minutes, including any refuting statements, with a warning at four minutes.

The second affirmative team member asks one question. Negative has one minute of preparation time and one minute to present an answer.

The second affirmative team member speaks five minutes including any refuting statements with a warning at four minutes.

The second negative team member asks one question. Affirmative has one minute of preparation time and one minute to present an answer.

The second negative team member speaks five minutes, including any refuting statements, with a warning at four minutes.

Consultation for two minutes is then allowed. The **first affirmative team member refutes** for two minutes.

JUDGING

Basic Guide:

Subject matter -	40 points
Delivery -	35 points
Rebuttal -	25 points
TOTAL	100 points

A poor debater does little more than give a prepared speech. **A good debater refutes the opposition's points in both the rebuttal and the prepared address.** A good rebuttal is an impromptu effort. Often it is the means of winning the debate.

DUTIES OF DEBATERS

1. Prepare a series of statements supported by evidence. Use:
   - **D** **emonstration** C relevant, easy to understand.
   - **E** **xample** C familiar to listeners, specific.
   - **B** **e prepared** C anticipate opponent's arguments and steal his/her thunder.
   - **A** **nalogy** C prove by inference.
   - **T** **estimony** C recognized authority, not prejudiced.
   - **E** **xhibit** C from everyday experience, clear.
   - **S** **tatistics** C few, round figures, compare.

2. Listen carefully for loopholes to attack evidence. Look for weak, unsupported statements.

   Ways To Attack

   (a) Evidence is not sufficient.
   (b) Evidence does not support conclusion.
   (c) Evidence is distorted or inaccurate.
   (d) Evidence comes from an unreliable source.
   (e) Show that if it is an illustration or comparison, that a different conclusion can be reached.
   (f) Evidence is evasive. "I think..." "Do you know..."

3. Speak **confidently**, **sincerely** and **positively**. Yet, be **friendly**. Have a good sense of humour. Unless the speaker can make the audience feel that he/she is competent to lead their thinking and their feeling, they will not follow him/her. Sell yourself!

MANNERS PLEASE!

At all times, **be polite**. Always address the opposition as "my honourable opponent" or "my worthy opponent".

No one is dumb, stupid or ignorant. Use the "royal we" or "my colleague".

NEVER, NEVER ADMIT OR CONCEDE!

Charm your audience and disarm your opponent.

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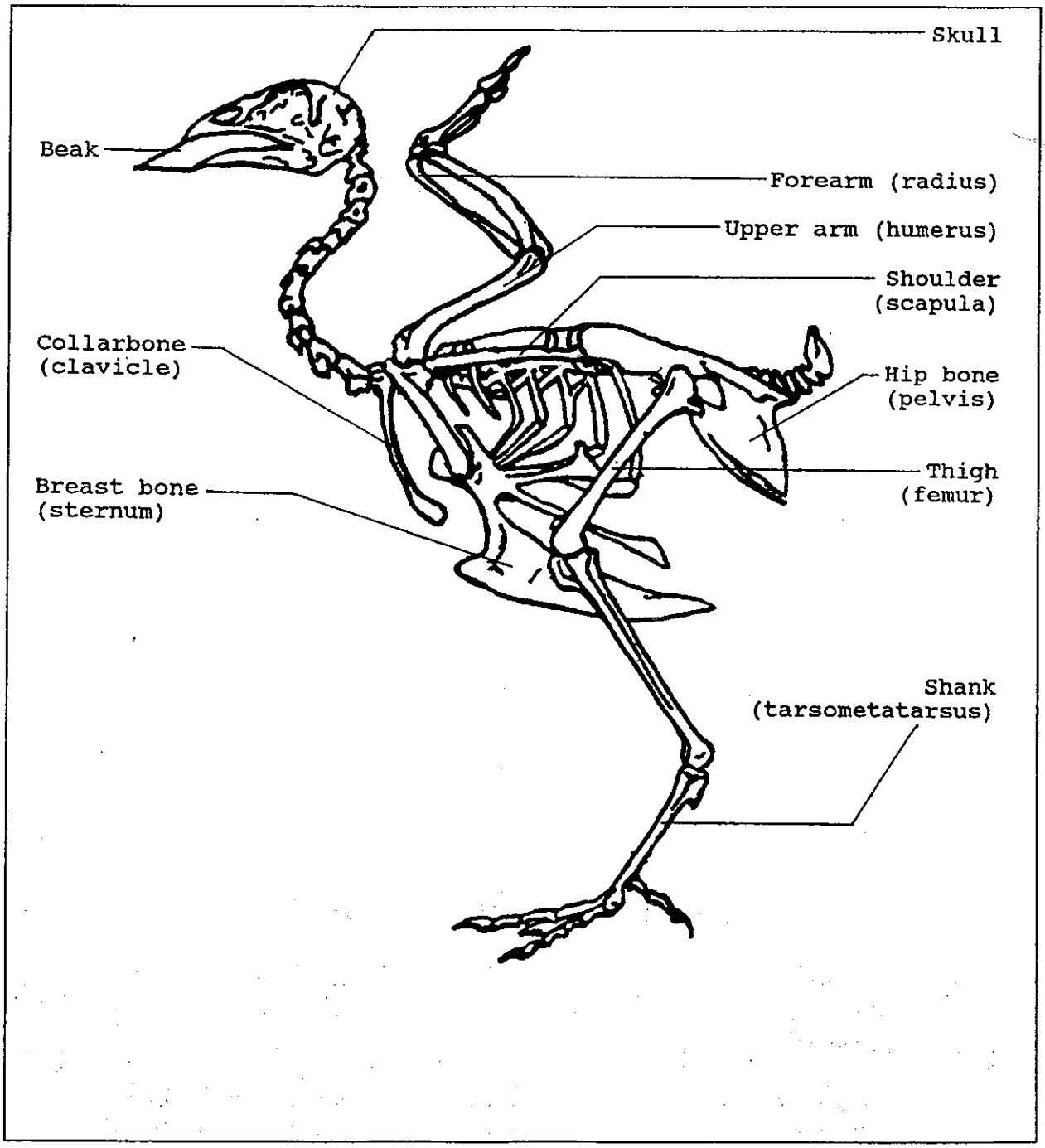
POULTRY - NUTRITION AND HEALTH
DIGGING DEEPER

Optional Information For Senior Members

WELCOME TO THE WORLD OF POULTRY

Underneath those chicken feathers lies a skeleton!



THERE'S NO PLACE LIKE HOME

ANIMAL WELFARE

You are probably familiar with animal welfare groups promoting animal rights. In the United States, some large beef feedlots and caged layer operations have been targets of very radical groups defending an animal's right to move freely, preferably outdoors, and to be treated humanely. Some advocate vegetarianism so that no animal is killed for human consumption. There have been incidents of vandalism at meat packing and poultry processing plants in Canada.

In the broadest sense of the word, all poultry raisers are concerned with animal welfare. After all, we already know that housing, nutrition, health, production, and therefore profit are interrelated. The difference is basically what each group will accept as the limit of animal rights.

Choose sides for a debate on animal welfare. The topic is: Resolve that the practice of raising poultry in confinement housing be abolished.

Divide into two groups to brainstorm for arguments. Here are two to get you started:

PRO: 1. It would be more economical if farmers didn't build huge barns to house poultry and therefore, food costs would be lower.

CON: 1. Parasites and predators in poultry raised outside are more a health risk than in poultry raised inside.

Choose two people to sit on the "pro" side and two for the "con" side. Remember that a debater doesn't necessarily agree with the side he or she is defending. The order of speaking is Pro #1 (2 minutes), Con #1 (2 minutes), Pro #2 (2 minutes), Con #2 (2 minutes) and Pro #1 (1 minute). Start by refuting your opponent's last comments and then persuading with your own arguments. If you don't have enough senior members, choose just one speaker per side.

EATING LIKE A BIRD

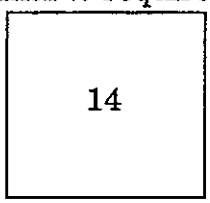
Many poultry farmers let their feed company manufacture the feed and formulate the ration but if you plan to blend your own ration, then you need to be familiar with Pearson's square.

Pearson's square is a simple procedure which was originally devised for use in blending milk products to a known fat percentage. Use of the square allows you to

blend two feedstuffs with different nutrient concentrations into a mixture with a desired concentration.

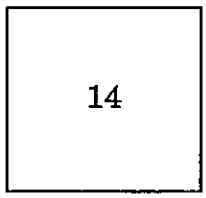
Suppose you have a protein concentrate, such as soybean meal (SBM) with 44% crude protein (CP) on a dry basis and corn with 10% CP (dry basis) and you wish to have a blend with 14% CP.

Using Pearson's square, place the final % required in the centre of the square:



On the top left hand corner, and top right hand corner, record the source highest in protein. On the left only, write the protein content of the source:

Soybean meal - 44%

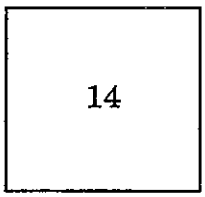


Soybean meal

On the bottom left, write the other ingredient (which is corn, in this case) and the % protein of the corn. On the bottom right, write corn:

Soybean meal - 44%

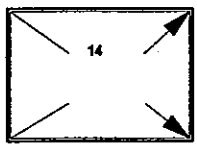
Corn - 10%



Soybean meal

Subtract diagonally across the square. Subtract the **SMALLER** number from the larger number.

Soybean meal - 44% (14-10) = 4 Soybean meal



Corn - 10% (44-14) = 30 Corn

The answer you get will be the proportion of the ration. In this ration we have:

4 parts of _____

30 parts of _____

Total parts in ration _____

Since rations are usually mixed in large quantities, you should determine how much soybean meal and corn is required in a one tonne mix. To make one tonne of this feed, calculate as follows:

Soybean meal	4/34 x 1000 (kg in a tonne)	= 118 kg
Corn	30/34 x 1000	= 882 kg
		1000 kg

Try it on your own.

You have a protein concentrate such as soybean meal with 44% crude protein on a dry basis and corn with 10% crude protein (dry basis) and you wish to have a blend with 20% crude protein.

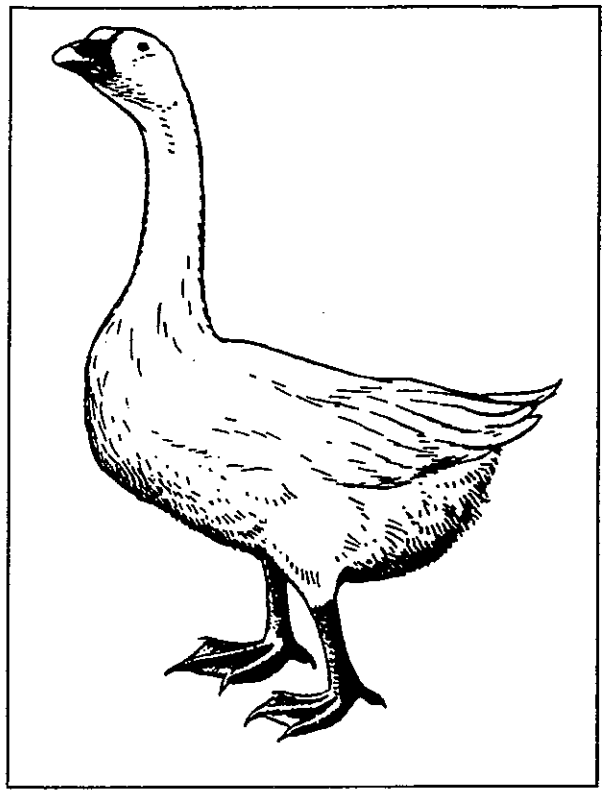
Your leader has the correct answer. Good luck!

FEED ME, I'M YOURS!

FEEDING NOT-SO-COMMON POULTRY

Many people raise birds other than chickens and turkeys, either for their own use, their own interest, or for specialty markets.

In feeding **ducks**, regardless of age, it is usually recommended that pelleted type rations be used, as they are easier to consume and tend to minimize feed wastage. Pellet size should be 0.3 cm for starter diets, and then may be increased to 0.5 cm from there on. Starting ducklings should be fed a starter diet for the first 2 weeks of age, following which they may be placed on finisher type diet to market age. Potential breeders should be placed on a developer diet about 1 month prior to the date of expected egg production.



As noted with ducks, **geese** should receive pelleted type diets. Goslings should receive a starter type feed for the first 3 weeks of life, followed by a suitable grower type feed containing 15-16% protein. Pellet size may be similar to that used with ducks. Since geese are known as excellent foragers, they can be expected to obtain a good portion of their feed by this means by the time they are 5-6 weeks of age. With adequate succulent forage, feed may be restricted to about 5.44 kg/feed/bird/week until they are 12 weeks of age. From 12 weeks to market age, the birds should have access to pellets on a free choice basis. Either an all mash or a mash scratch system of feeding may be used, providing the system meets the bird's protein requirements of at least 15% after the initial 3 week period. Geese are marketed when they are about 5 to 6 months of age.

Those used for breeding purposes should be provided with a suitable breeder type ration containing approximately 18% protein. This level is somewhat higher than normally required for other kinds of breeders but, since geese tend to forage extensively, a portion of their diet may consist of material containing less protein.

Guinea Fowl are fed in a manner very similar to turkeys. They may be fed either mash or pellets. Developer feeds are supplied to keets after about 6 weeks. Guineas are marketed generally around 14 weeks of age. As was the case with guineas, the nutritional requirements of pheasants are quite similar to the turkey and feeding methods described for that species may be used in raising these birds.

Experiments at the Oregon Experimental Station in the United States has shown that Japanese **quail** may be raised very successfully by using a turkey starter diet containing 28% protein for the first two weeks followed by a well fortified chicken broiler ration to sexual maturity at 56 weeks. For adult quail, a well fortified chicken layer or breeder ration containing 15-16% protein has given satisfactory results.

A BIRD IN THE BARN IS WORTH TWO IN THE SICK PEN

POST MORTEM EXAMINATIONS

An experienced poultry farmer or serviceperson may be able to recognize 10 to 25 common diseases, but it is very difficult to tell the difference between hundreds of possible diseases. That's why post mortems by a trained poultry veterinarian are essential to determine the cause of a health problem.

Birds within a flock that are typical of the problem or symptoms are examined. If the problem is increased mortality, mainly dead birds should be submitted. If symptoms such as diarrhea, respiratory problems, and leg weakness are observed, bring live birds with those symptoms. If in doubt, bring both live and dead specimens. The minimum sample size is 5 birds but the more the better. Usually only enough birds are examined to make a diagnosis.

For a good diagnosis, it's vital to have the information on production, when the symptoms or deaths started, feed consumption, water consumption or any other abnormality.

Externally, the vet would look for wounds, injuries, diarrhea, nasal and respiratory discharge, discharge from the eye, feather and comb condition, and dehydration. Internally, the vet would examine the organs for any lesions.

If the lesions are obvious and typical then an immediate diagnosis can be made. If not, a presumptive diagnosis is made and further tests are carried out to confirm it.

Test	Purpose
1. **Bacteriology**	Identify bacteria and do sensitivity for the right antibiotic; takes 1-3 days.
2. **Histology**	Microscopic examination of cellular structure; takes 5 days or more.
3. **Serology**	Levels of disease antibodies in blood; takes 1-6 days.
4. **Feed analysis**	Level of feed ingredients, drugs or toxic substances; 1-6 days
5. **Virology**	Identification of levels of disease antibodies in the blood; 10 days plus

- Based on information supplied by Hope Laboratories.

IT'S SHOWTIME

DETERMINING QUALITY FOR ACHIEVEMENT DAY

Here, in more detail, are the seven points to consider when selecting dressed birds for show.

1. **CONFORMATION**

   The bone or skeletal structure of the bird determines, to a considerable degree, the distribution and amount of meat. Certain defects in structure detract from the sales appeal of the carcass.

2. **FLESHING**

   The drumsticks, thighs and breast carry the bulk of the meat. There is, however, a definite correlation between the covering of the flesh over the back and the amount of flesh on the rest of the carcass. Females almost invariably carry more flesh over the back and will generally have a more rounded appearance to the breast, thighs and legs.

3. **FAT**

   Some consumers have a preference for birds with white or light colored fat. Others prefer yellow fat. The color of the fat is not a part of the fat factor in quality. As pointed out earlier, fat in poultry is judged entirely on the basis of how much is under the skin. This is true even in the case of chicken parts. Accumulations occur first around the feather follicles in the heavy feather tracts. Poorly fatted birds may have some accumulation of fat in the skin along the heavy feather tracts on the breast. As the bird progresses in "finish", accumulations will be noted at the juncture of the wishbone and keel and where the thigh skin joins the breast skin. At the same time, accumulations will be noted around the back and hips.

   Well finished older birds will have sufficient fat in these areas and over the drumsticks and thighs so that the flesh is difficult to see. Fowl which have stopped laying have a tendency to take on excessive fat in the abdominal area.

   Well finished young birds will have less fat under the skin between the heavy feather tracts on the breast and over the drumsticks and thighs than mature birds. It should be noticeable, however.

4. FREEDOM FROM PINFEATHERS

There are two types of pinfeathers to be considered in grading. They are, protruding and non-protruding. Protruding pinfeathers are those which have broken through the skins and may or may not have formed a brush. Non-protruding pinfeathers are those which are in evidence but which have not pushed their way through the outer layer of skin.

Ready-to-cook poultry must be free of protruding pinfeathers before a quality designation can be assigned. In this connection, the regulations define the words "free from protruding pinfeathers" to mean that the carcass is free from protruding pinfeathers which are visible to an inspector or grader during an examination of the carcass at normal operating speeds. However, a carcass may be considered as being free from protruding pinfeathers if it has a generally clean appearance, especially on the breast, and if not more than an occasional protruding pinfeather is in evidence during a more careful examination of the carcass.

Vestigial feathers, hair in the case of chickens, turkeys, guineas and pigeons, and down on ducks and geese, must also be considered.

5. FREEDOM FROM EXPOSED FLESH RESULTING FROM CUTS, TEARS AND BROKEN BONES

Tears and missing skin permit the flesh to dry out during the cooking process, thus lowering the eating quality of the bird. The number and extent of such defects permitted depends on their location, whether on the breast or elsewhere on the carcass.

6. FREEDOM FROM DISCOLORATION OF SKIN AND FROM FLESH BLEMISHES AND BRUISES

When poultry was dry-chilled and dry-packed, abrasion or removal of the outer skin was a serious matter and good processors took every means to avoid damaging the outer layer of skin that would cause discolored areas as the skin dried. Today, most poultry is sold either ice-packed or wrapped in a water-resistant material. Either method prevents air from reaching and drying out the areas from which the outer cuticle has been removed. The result has been that much of the poultry is scalded at temperatures around 60°C and all of the cuticle is removed. This facilitates removal of pinfeathers and cuts down operating costs. Abrasions, as a consequence, do not become a problem unless the poultry has been exposed to the air, in which case the abrasions dry out and become discolourations. If this has occurred at the time of the examination, the size of the areas are taken into consideration under the heading of "discolourations."

Bruises in the flesh or skin are permitted only to the extent that there is no coagulation or clotting (discernible clumps of red cells). Small clots in the skin or on the surface of the flesh may be cut to allow them to leach out in the chilling process. Such cuts would be taken into consideration in determining the quality. Blue or green bruises must be removed before grading. Excessive grade-loss because of bruises should be called to the attention of the management.

7. FREEDOM FROM FREEZING DEFECTS

The skin of frozen poultry often shows a condition known as "box burn." This shows up as a white area where the skin has come in contact with the lining of the box. The outer cuticle is the only part affected. This condition should not be confused with that of freezer burn. In grading, box burns would be included under discolourations.

In addition to freezer burn, there are other freezing defects of significance in establishing the grade of consumer packaged poultry, parts, or specified poultry food products. These are darkening of the carcass due to slow freezing or defrosting, and, in the case of consumer packaged poultry or parts, seepage of moisture from the product resulting in layers of clear, pinkish or reddish ice.

POULTRY

Nutrition

A Guide for Leaders and Youth Leaders

Ontario 4-H Council

Ontario Ministry of Agriculture,
Food and Rural Affairs

4-H 1900 99 LE

The Ontario 4-H Program provides opportunities for the personal development of youth.

THE 4-H PLEDGE

"I pledge:
My Head to clearer thinking
My Heart to greater loyalty
My Hands to larger service
My Health to better living
For my club, my community and my country."

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BE A "GREEN" 4-H CLUB

The 4-H program uses a lot of paper. Please help us to reduce our costs, and save a few trees, by remembering these tips.

- Only 4-H members (10-21) and screened volunteers should receive 4-H resources.
- If your club plans to do this project again, keep the resource materials so you don't need to reorder.
- If your club has extra resources, please return them promptly to the Ontario Ministry of Agriculture, Food and Rural Affairs office so they can be used by someone else.

WELCOME TO 4-H

The 4-H Club Leaders' Handbook says that, "Volunteer 4-H leaders are a blend of friend, teacher and parent." What a big order to fill! But you will discover that you have many talents as a 4-H leader. Having an interest in young people and their development and being willing to take up the challenge of 4-H leadership is the first step to success.

This project focuses on poultry. However, the development of members as individuals is your real goal. You will get to know the club members and where their interests lie very well. Use this knowledge, your own expertise and imagination to plan a fun, interesting and challenging club program for your members. And enjoy being a 4-H leader!

RESPONSIBILITIES

Before your project begins:

1. Familiarize yourself with current provincial and local 4-H policies;
2. Attend a leader training session (if scheduled);
3. Advertise the project and organize a club with a minimum of six eligible members and one volunteer leader per club except in cases deemed to be unique and approved by the local 4-H Association; and
4. Review available resources and begin planning the club program.

During the project:

1. Attend each meeting and the Achievement Program;
2. Assist members in planning and presenting the club program;
3. Provide a FUN, learning atmosphere;
4. Ensure the club membership list and/or enrolment cards are completed and forwarded to the designated person in your area before the second meeting;
5. Order awards and project and name plates once membership list is completed;
6. Help each member to set and achieve goals for personal development;
7. Encourage members to work together as a group;

8. Provide guidance in choosing and completing an Achievement Program; and
9. Evaluate the club program, sharing the club program, sharing the results with the 4-H Association and the Ontario 4-H Council.

WHAT IS AN ACHIEVEMENT PROGRAM?

- An opportunity for members to share the knowledge and skills they have gained during this 4-H project.
- Each member should be involved in some way.
- Informs the public about the purpose and goals of the 4-H program.

Here are some Achievement Program suggestions specific to this project. Your club may wish to choose one idea or combine a few. Involve club members in selecting a suitable idea and making the necessary preparations.

Contact the local newspaper or radio to tell them about your activity, the date, the time and where it will be held.

Send out a personal invitation to the people you plan to invite to the Program, or send a personal request from your club to visit an organization and present your Achievement Program. Don't forget to include parents/guardians and/or family members.

1. Organize a show as a 4-H club or in conjunction with a local fair. Set up classes for fancy poultry, eggs, and/or dressed poultry. Members should be involved in all aspects of organizing and exhibiting in the show.

2. Set up a display at a local fair, shopping mall, school, etc. Have members demonstrate candling, how to hold a bird, etc. and answer questions from the public.

3. Some communities have cable television stations looking for community programming. Approach them about the possibility of your 4-H club developing a 30 minute show covering what the members have learned in this project.

4. Invite parents and another 4-H club, media, public, or other youth organization to an open house hosted by your 4-H poultry club. Set up stations covering the topic areas or skills learned in this project. Demonstrate the skills - you could even offer a "learn to do by doing" opportunity to visitors.

RESOURCES

The benefit of resources such as guest speakers, tours, etc. cannot be emphasized enough to present material in an interesting and lasting way. Their use, however, requires some advance planning both in lining up resources and in preparing the members. For example, if you're planning a tour, make sure the tour leader knows what age group he/she is talking to, their previous knowledge, and what you'd like to emphasize. Make sure the members know what to watch for -you could give them a list of questions to answer by the end of the tour.

Here is a list of resources as well as ideas for special activities.

1. Organize a tour to the Arkell Poultry Research Centre. For more information, please contact the Arkell Poultry Research Station, University of Guelph, Guelph, Ontario N1G 2W1, (519) 836-0150. Tours are available on weekdays from 8:30 a.m. to 4:30 p.m. (summer hours, 7:30 am to 4:00 p.m.)

2. Organize a trip to a veterinary clinic specializing in poultry health. Observe an autopsy if possible.

3. Organize a club trip to a feed mill which produces poultry feed. Speak to a representative of the mill about how the feed was developed, what ingredients go into the feed, and what equipment is needed to make the feed.

4. Organize a tour of a poultry processing plant. Try to arrange for examples of dressed poultry for members to look at.

5. Have members take part in a judging workshop. Have an experienced judge or poultry breeder help members learn to evaluate the different types of poultry and poultry products. Put together two or three classes of several entries for members to evaluate.

6. OMAFRA has poultry factsheets available:

   Heat Stress in Caged Layers Agdex 452/10, Order No. 88-111

   Influence of Diet on Egg Quality Agdex 450/56, Order No. 88-072

7. OMAFRA field offices agricultural engineers may have some information on poultry housing requirements. Farm building contractors would be another source of this information.

8. Companies supplying either poultry feed and/or birds have some good pamphlets.

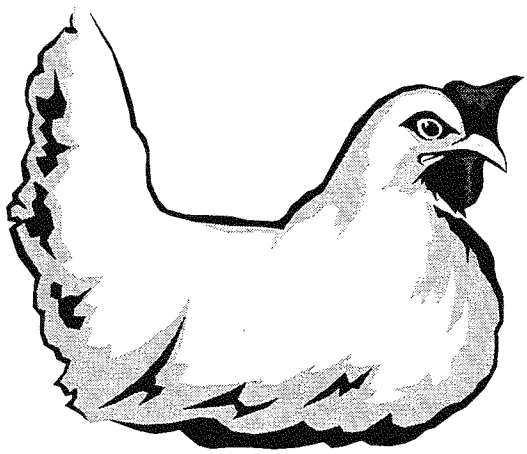
9. Ontario Hydro is willing to provide resources. For more information, contact the Ontario Hydro Corporate Library, 700 University Avenue, Toronto, Ontario M5G 1X6, or at 416-592-2715. Information can also be accessed on the web at http://www.hydro.on.ca.

CAUTION

Farm visitors can spread diseases within a farm and among farms. People spread contaminated material directly on footwear, hands and clothing.

Farm families hosting a 4-H meeting should ask visitors to comply with certain precautions to protect their livestock. These may include the use of a sanitary foot bath or wearing plastic, disposable boots and clean coveralls. As a courtesy, 4-H members should arrive at the host farm with freshly laundered clothes and clean rubber boots. Upon returning home, 4-H members should change to different clothes and boots before entering their barn.

Remember, some diseases are spread very easily. Animal welfare, pride in stockmanship and peace of mind are reasons to prevent spread of diseases in addition to the cost associated with a disease outbreak.



4-H CLUB PROGRAM PLANNING CHART

MEETING OR EVENT	DATE	TOPIC ACTIVITY OR TASK	PEOPLE WHO COULD HELP	PRESENTATION IDEAS TO CONSIDER

SPECIAL NOTES FOR THIS PROJECT

1. Any page number in this guide refers to the Members' Manual unless otherwise noted.

2. The Members' Manual has been designed as a reference source. Encourage members to leave their manuals closed for most of the meeting, allowing them to observe, learn and take part in the discussion and other activities. It is **not necessary to read** all the information given in the Members' Manual during the meeting. The page numbers in this Guide refer to the Members' Manual unless otherwise indicated.

3. You are free to change the order of meetings and information if you like. **Also, remember if you do rearrange the order of meetings, you might need to reorder the "Before the Next Meeting" activities so that they fit with the Roll Calls.** The schedule of meeting dates can be recorded on page 5.

4. **Remember to Refer to Your 4-H Volunteers' Handbook** - You will find many useful tips and ideas covering topics such as program planning, successful meetings, parliamentary procedure, effective communicating and presentation methods. Refer to your Volunteers' Handbook as you plan meetings. If you do not have a Handbook, please order one through your OMAFRA contact.

5. **Judging** - Judging tips is an optional activity in meetings in this project. These tips have not been included in the normal one hour meeting time. Each member should have a 4-H Judging Handbook (4-H-1550-91) and be encouraged to use it. These can be obtained from your OMAFRA contact.

6. **Fitting and Showing** - Meeting Six is all about fitting and showing. It can be held whenever it is convenient for your club, depending on the date of the Achievement Program. If members will be showing at the Achievement Program they should be encouraged to start working on their fitting and showing skills right from Meeting One. Keep tabs on members' progress. Some members may not have anyone at home to ask for help. It is a good idea to pair an experienced senior member with a junior member who could use some help or encouragement.

7. **Optional Activities -** There are meeting activities, meeting mixers and extra topics for discussion that have been listed in this Guide. They provide greater detail and information and should be used as a resource for meeting presentations.

At the bottom of the table of contents page in the Members' Manual you will see the Kids Help Phone logo and number. Kids Help Phone is available to over 7 million children and teenagers throughout Canada.

It is a national, bilingual, confidential, toll free help line staffed by paid, trained professionals. In response to the problems and concerns of our youth, Kids Help Phone provides a listening ear, emotional support, counseling, information and referrals. Children and teens from anywhere in Canada can call anonymously 24 hours a day, 365 days a year.

Children and teens can call about anything that is bothering them including: abuse; drugs; alcohol; conflicts with parents, friends or teachers; pregnancy; sexuality; suicide; or parental separation and divorce.

Please mention this number to your members and explain what it is for. Make sure they know that it is free and they don't have to give a name or address.

☎☎☎☎☎☎☎☎☎☎☎☎☎

The Kids Help Phone gets 1000 calls a day... 2000 more get a busy signal. If you or your club or someone you know would like to make a donation to the Kids Help Phone, call 1-800-268-3062.

FEEDBACK

The 4-H Resource Development Committee of the Ontario 4-H Council reviews and evaluates 4-H resources. Comments and suggestions about 4-H manuals and guides are always welcome. They may be sent to the following address.

4-H Resource Development Committee
Ontario 4-H Council
R.R. #1 Thornloe, Ontario P0J 1S0
Phone/Fax: 1-800-937-5161
E-mail: lduke@ntl.sympatico.ca

MEETING ONE — WELCOME TO THE WORLD OF POULTRY

OBJECTIVES

1. To have members and leaders get to know each other.
2. To have all 4-H members understand the structure and format of the 4-H club meeting.
3. To elect a club executive who will be responsible for the business portion of the meetings.
4. To have members understand what is expected of them for completion requirements.
5. To have members become knowledgeable on the parts of a chicken.

PREPARATION AND EQUIPMENT

For this meeting you will need:

- name tags
- enrollment cards and membership list
- Club Project" signs (if available)
- Members' Manuals
- Basic Care Guides to give to new members

TIME GUIDELINES

A time guideline has been provided for each section of the meeting. Please remember that this is only a guideline. The number of members, their maturity, specific interests and the way the meeting is structured will all influence the duration of specific activities.

IN A NUTSHELL

Getting Acquainted Activity	10 min.
Getting Started	15 min.
Roll Call	5 min.
A Road Map To Good Meetings	20 min.
Poultry Parts	15 min.
Fitting the Puzzle Together	5 min.
What About Nutrition?	1min.
Making the Connection	2 min.
What's Next?	2 min.
Before the Next Meeting	5 min
	80 min

Optional: Judging Tips
Digging Deeper

GETTING STARTED (15 minutes)

1. Begin with the 4-H pledge. (Make sure new members have a copy to look at.)
2. Welcome the members. Introduce leaders. Have members introduce themselves. Introduce the youth leader (if this has been decided). Ensure that everyone has a name tag (optional).
3. Complete membership list.
4. Outline the opportunities members have such as taking part in the local fairs, 4-H Go For The Gold, 4-H Members' Conference etc...
5. Distribute "4-H Project" signs if available.
6. Distribute the Members' Manuals.
7. Give a brief summary of what club is about and topics covered.
8. Discuss the members' requirements for the project (page 1). Outline any expectations you have of the members.
9. Briefly discuss the Achievement Program possibilities.
10. Refer to Group Games and Social Recreation (4-H-021-91) for some get acquainted activities.

ROLL CALL (5 min.) page 5

Everyone answers. At this meeting, each member should answer by stating their favourite breed of rabbit. It is very important that each member receive some **positive reinforcement**. This will help to increase the member's confidence in taking part in the meeting.

ROAD MAP TO GOOD MEETINGS (Total: 20 minutes)

It is important for everyone to become familiar with the basics of running a good meeting. Review with members the purpose of an agenda and the executive's responsibilities. Have the club members elect an executive. You may find the 4-H Volunteers' Handbook and the OMAFRA Factsheet, Procedures for Meetings (96-009) helpful.

The club president will chair the short business section at the beginning of each meeting. Helping members to understand and use the basics of running a meeting will help them to become familiar with process.

YOU'VE ARRIVED (5 minutes) page 5

An outline for the members of all the types of poultry. Their answers will help you find out more about the home operations of your members.

POULTRY PARTS (15 minutes) page 6

This activity is a good one for a group activity.

Divide club into 2 teams. Post 2 large unlabelled diagrams of the chicken. See pages 29 - 31 and 35-37.

Have 2 sets of body part names, each in separate bowls. The names of these parts can be found on pages 33 and 39 of this Guide. When the race starts, members come up one at a time, choose a name from the bowl and attach it to the diagram.

Members may not change another member's answer. Score by totalling correct answers with a 4 point bonus for the team finishing first.

When the teams are finished, go through their labelled diagrams as a group and make sure that any errors are corrected.

FITTING THE PUZZLE TOGETHER (5 minutes) page 7

Inform members that there are several housing options for poultry. You may want to have members describe some types.

WHAT ABOUT NUTRITION? (1 minute) page 7

Emphasize why nutrition is important. Give pointers.

MAKING THE CONNECTION (2 minutes) page 8

Reinforce the connections between housing, nutrition and health.

WHAT'S NEXT? (2 minutes) page 8

Briefly outline the next five meetings emphasizing the topics as mentioned in their roll call answers.

BEFORE THE NEXT MEETING (5 minutes) page 8

1. Outline some potential senior projects that members may want to do.

2. Briefly discuss the Achievement Program.

JUDGING TIPS (Optional) page 9

Can be covered as outlined in Members' Manual, page 9.

AFTER MEETING ONE

To prevent dropping out, take time with new members to make sure they know what's expected of them. Make them feel welcome and offer to help them in any way you can.

DIGGING DEEPER - optional information for seniors, **separate handout.**

This could be reviewed with seniors using a relay similar to the one on body parts. This activity could be done while juniors are doing body parts, and then the two groups could share their answers with each other.

MEETING TWO THERE'S NO PLACE LIKE HOME

OBJECTIVES

By the end of this meeting members should:
1. Be familiar with the components of poultry housing - ventilation, feeding and watering equipment, manure disposal, etc.

PREPARATION AND EQUIPMENT

1. Bring any resources that you have collected for members. Sources for speakers and information include local Ontario Hydro workers, OMAFRA engineers, poultry hatcheries, farm building contractors or Agriculture Canada.

2. This topic area lends itself very well to a tour or guest speaker. Give members enough background before the tour or speaker so that they know what to watch or listen for. Members can use the checklist during or after their tour. If you do tour a poultry barn, ensure that everyone wears clothes and footwear that have not been in another barn without washing. Provide everyone with plastic disposable boots.

IN A NUTSHELL

Roll Call	5 min.
Home Sweet Home	5 min.
What to Look for in Poultry Housing	20 min.
Housing a Small Poultry Flock	20 min.
Before the Next Meeting	5 min.
	55 min.

Optional: A Checklist
Judging Activity
Digging Deeper

ROLL CALL (5 minutes) page 11

HOME, SWEET HOME (5 minutes) page 11

Before you discuss this topic, you may want members to brainstorm for things that every bird needs in its home.

In small groups, have members discuss why each of the brainstormed items is important.

WHAT TO LOOK FOR IN POULTRY HOUSING (20 minutes) page 11

There is a lot of information in this section. Here is a suggested format for presenting it.

1. A leader or youth leader could explain the first two paragraphs.

2. When covering the section on location, ask members what they think would need to be considered as far as location of a new building.

3. Have senior members explain the paragraphs on insulation and ventilation to themselves. Ask an agricultural engineer or building contractor in advance for some building plans. Ask members to point out the air intake slots and fans on the diagrams.

4. Explain the importance of heating. Have members examine the chart. Ask them to relate the chart temperatures to today's temperature - how much warmer (or cooler!) are they? Ask how you would determine the temperature - hang a thermometer near the brooder.

5. Ask members why they think artificial lighting is needed.

6. Bring samples of feeding and watering equipment from home or suppliers -they can be returned. Let members examine them and see how they work.

A CHECKLIST (Optional) page 14

Have members answer these questions if the club goes on a tour. You may want to have members use it on their barn at home. These questions can also be used with the following activity.

HOUSING A SMALL POULTRY FLOCK (20 minutes) page 15

Divide the club into small groups. Based on the information given for the laying house, have members answer the questions on the checklist (page 14). Here is how it may look.

A. Not enough information to tell!
B. Insulated on ceiling and walls, not sure what it's insulated with.
C. Two windows located on sides of building. No fans; windows likely provide cross-ventilation since it's a small building.
D. No heat required in laying barn.
E. One light every 13 m^2.
F. Hanging feeders.
G. Looks like jug waterers.
H. Clean out window for droppings pit.

Ask one group to present its answers, other groups can add anything new.

BEFORE THE NEXT MEETING (5 minutes) page 17

1. Check to see if members have any questions about projects.
2. Remind members to bring feedstuffs with labels to meeting.

JUDGING ACTIVITY (Optional) page 17

Make sure members are familiar with how to judge and give reasons. Refer to the beginning pages of the Judging Handbook.

DIGGING DEEPER - optional information for seniors, **separate handout**

Try to allot time for senior members to present their debate to the entire club. Seniors could work on this while juniors do the activity on housing for a small poultry flock.

MEETING THREE EATING LIKE A BIRD

OBJECTIVES

Members should be able to:
1. Name the five key nutrient groups for poultry and sources of each.
2. Identify the parts and functions of the digestive system.
3. Understand the information which can be found on a feed tag.

PREPARATION AND EQUIPMENT

1. Bring two balloons, some popped popcorn, and some grit for each member.
2. Bring a class of feed tags to judge if you are doing that activity.

IN A NUTSHELL

Roll Call	5 min.
What Am I?	5 min.
Digestive System of Poultry	10 min.
Feedstuffs for Poultry	15 min.
The Feed Tag	15 min.
Before The Next Meeting	5 min.
	55 min.

Optional: Judging Tips
Digging Deeper

ROLL CALL (5 minutes) page 21

Post 5 sheets of paper without titles, but which represent the categories of energy, protein, vitamins, minerals and water. (You may want to label them in pencil so you keep them straight but members can't read them.) As members give their answers, allocate them to their appropriate sheet. Some foods and beverages will fit into more than one. After everyone has given his/her answer, see if members can guess the category represented on each sheet. Here are some examples to get you on the right track:

Orange juice 6 vitamins, water
Eggs 6 protein
Cereal 6 energy
Hamburger 6 protein, energy
Green Beans 6 vitamins, minerals

WHAT AM I? (5 minutes) page 21

Reinforce to members that these five components of a diet are necessary if healthy birds are to be produced.

DIGESTIVE SYSTEM OF POULTRY (10 minutes) page 22

On pages 41 to 45 of this Leader's Guide there is a large diagram of the digestive tract. The pages could be removed, joined together, and mounted on a wall. On page 47, cut out the words for members to "pin" the word to the location on the diagram.

FEEDSTUFFS FOR POULTRY (15 minutes) page 24

While this information is in the book for reference, it can probably be covered using these two activities.

a) Here's a fun activity you might want to try to illustrate how the gizzard works. Ask each member to blow up a balloon to the size of an orange. Give them 5 or 6 kernels of popped popcorn to put in the balloon. Tie the balloon and have them roll it gently in their hands until the popcorn breaks down. Cut it open and observe the degree of "digestion".

   Blow up another balloon to the same size as before. This time add the popcorn plus some grit. After rolling and dissecting the balloon, the popcorn should be digested more in the same amount of time.

b) Set up a labelled display of the feed/feedstuffs members brought to the meeting. Give members a chance to feel it, smell it, etc.. You may also want to bring several feedstuffs such as corn and soybeans, and several feeds such as crumbles, pellets, starter ration, etc. to ensure a variety.

THE FEED TAG (15 minutes) page 26

Have members answer the questions on page 27. Try to have all members answer at least one question. If members are having a hard time, give them some hints.

Supplement A

1. Growing and laying poultry
2. 32% poultry premix, BIG 200
3. Yes
4. Yes
5. Yes
6. 8.25%
7. 110 IU/kg
8. No
9. Manufacturer
10. Doesn't

Supplement B

1. Laying hens
2. Hy-energy poultry layer supplement
3. Yes
4. Yes
5. Yes
6. 6.0%
7. 75 IU/kg
8. No
9. Manufacturer
10. Doesn't

BEFORE THE NEXT MEETING (5 minutes) page 27

1. If members are preparing projects, check on their progress.

2. Ask members to bring large juice cans or plastic jugs for a Meeting #4 activity.

JUDGING TIPS (Optional) page 28

If you're setting up a class of feed tags, provide the members with as much information as possible about the kind of poultry you are feeding. In order to make a good class, you may have to make up your own feed tags leaving out some information on them. You may want to ask your feed dealer to provide some tags.

DIGGING DEEPER - optional information for seniors, **separate handout**

This could be done while juniors do The Feed Tag activity.

The correct answer is:

soybean meal	10/34 x 1000 =	294 kg
corn	24/34 x 1000 =	706 kg
		1000 kg = 1 tonne

MEETING FOUR FEED ME, I'M YOURS

OBJECTIVES

Members will learn:
1. How to set up a feeding program for poultry.
2. How to build inexpensive feeding equipment for poultry.
3. How much they have learned already in a fun project review.

PREPARATION AND EQUIPMENT

1. Bring any required supplies to build the poultry feeders and waterers. Make sure you have the necessary tools.
2. A calculator may be helpful for some members in determining the feed to gain ratio.

IN A NUTSHELL

Roll Call	5 min.
Feeding the Meat-Type Bird; Chicken Broilers and Turkeys	5 min.
Feeding the Laying Hen	5 min.
Fancy Poultry	5 min.
Building Feeding and Watering Equipment	20 min.
Project Review	20 min.
Before the Next Meeting	5 min.
	65 min.

Optional: Judging Tips
Digging Deeper

ROLL CALL (5 minutes) page 29

FEEDING THE MEAT-TYPE BIRD; CHICKEN BROILERS AND TURKEYS (5 minutes) page 29

Inform members that feed efficiency is just one of many improvements and changes that have occurred in the poultry industry within the past 30 years.

FEEDING THE LAYING HEN (5 minutes) page 30

Point out the laying hen's improvement in feed efficiency from 3.0 (an average of 2.7 and 3.2) to 1.6.

FANCY POULTRY (5 minutes) page 31

BUILDING FEEDING AND WATERING EQUIPMENT (20 minutes) page 31

Members could work on their own or in pairs for this activity. The directions are self explanatory from the diagram. Make sure members are working carefully and safely especially if they are cutting tin or plastic. You may want to demonstrate how to build one of the more complicated types and let members work on the simpler ones. Emphasize that this equipment would be for a very small backyard flock.

PROJECT REVIEW (20 minutes) page 32

Cut out the question cards at the back of this guide, pages 49 - 57.

Divide the group into two teams and designate a push pin colour for each. Decide which team will be up first. Start with one member of that team. Members at bat can choose the question to be attempted (single, double, triple or home run) or all the cards can be shuffled together into one pile so the card will be selected at random. Game leader picks a question from the pile and reads it. A correct answer is a hit and advances the batter according to the difficulty of the question. An incorrect answer is an out. After three outs, bases are cleared and the other team is up. To score a run, a player must be forced off base and hit home by a team mate.

Use the pushpins on a cork board to illustrate the baseball diamond.

The last 5 questions relate to Meeting #5. You can leave them out, or keep them as a teaser for the next meeting.

BEFORE THE NEXT MEETING (5 minutes) page 32

If members are preparing projects, check on their progress.

JUDGING TIPS (Optional) page 33

Judging fancy poultry is a complicated job. It would be a good idea to judge a bird as a group so they know what to look for. You may want to invite a fancy poultry breeder in as a guest judge to share some of his/her skills.

DIGGING DEEPER - optional information for seniors, **separate handout**

Some senior members may have experience to share in feeding other types of poultry. Members could read and discuss this while juniors make feeders and waterers.

MEETING FIVE

A BIRD IN THE BARN IS WORTH TWO IN THE SICKPEN

OBJECTIVES

After this meeting, members should:

1. Be able to differentiate between a sick bird and a healthy bird.
2. Have a basic understanding of how to prevent disease.
3. Be familiar with some common poultry diseases related to nutrition and housing.

PREPARATION AND EQUIPMENT

1. Bring a class of dressed poultry if you are doing the judging section.
2. A vet with some poultry expertise would be an appropriate guest speaker for this meeting.

IN A NUTSHELL

Roll Call	5 min.
Preventing Disease	10 min.
Super Sleuth	15 min.
Health Problems	10 min.
Before the Next Meeting	5 min.
	45 min.

Optional: Judging Tips
Digging Deeper

ROLL CALL (5 minutes) page 35

Members' answers are a natural lead-in to the section on spotting a healthy bird.

PREVENTING DISEASE (10 minutes) page 35

Lead the members through a group discussion of these 11 points encouraging them to share any experiences they have had in this area.

SUPER SLEUTH (15 minutes) page 36

Have members form small groups. Give each group one symptom as listed on page 37. Have members diagnose the symptom and brainstorm possible remedies. After each group has had a short discussion, have them share their symptom, diagnosis and remedy with other club members.

Emphasize that members should get a professional diagnosis if they are unsure in a real-life situation.

HEALTH PROBLEMS (10 minutes) page 37

Lead members through descriptions of common health problems. Ask members if they use, have seen or have heard of any other preventive measures.

PROJECT COMPLETION

Read the note on page 26, this Guide. If you want members and parents/guardians to complete the Project Summary sheet, copies should be given out at this meeting.

BEFORE THE NEXT MEETING (5 minutes) page 39

1. Remind members that there is only one more meeting and that if members are preparing projects, they should be just about done.

JUDGING TIPS (Optional) page 39

Refer to the 4-H Judging Handbook for a sample scorecard.

DIGGING DEEPER - optional information for seniors, **separate handout**
This is intended to be information for the member rather than actually having them perform an autopsy.

MEETING SIX IT'S SHOWTIME!

OBJECTIVES

To encourage members in showing and grooming poultry.

PREPARATION AND EQUIPMENT

Information on Fitting and Showing is available for members. Order 4-H 1900 98 FSE through your OMAFRA contact.

There are many options for this meeting. It could be held during the regular meeting time frame, with demonstrations and perhaps some hands on practice. It could also be organized as a half-day clinic. You shouldn't need more than half a day, and then only if you have members who are showing fancy poultry. You may want to cover this information earlier in the project and make this Meeting Two or Three.

Conducting a half-day workshop is a major undertaking and requires the work of several people. Delegate responsibilities and appoint committees to look after specified activities. Parents are a great resource and should be involved early on.

First, decide on the location of the meeting. A committee could help with any site preparation.

For members who will be showing their birds, you will need to have an experienced exhibitor to demonstrate the techniques of grooming. Experienced senior members can help here, too. If you have members who are showing dressed birds or eggs, you may want to give practical pointers on presentation and appearance.

Be sure to include a showmanship demonstration for everyone, regardless of what they are showing. If you have a show like this, be sure to make it very constructive by having the judge give tips to each member about his or her presentation. As leader you should follow up the judge's comments with some positive advice to your members about showing.

Be sure to have a crew assigned to clean up at the end of the event.

Senior members can be very helpful to Juniors with presentation, grooming and showing techniques.

IN A NUTSHELL

Roll Call	5 min.
Eggs-actly Right	20 min.
Showmanship of Dressed Poultry	20-40 min.
Showmanship of Fancy Poultry	20-40 min.
Before You Go	5 min.
	70-110 min.

Optional: Digging Deeper

ROLL CALL (5 minutes)

Name one thing to remember when showing a chicken at a poultry show.

Members might include such things as making sure the bird is clean, showperson is wearing white, removing the chicken carefully from the cage, holding the chicken properly, etc.

EGGS-ACTLY RIGHT (20 minutes)

SHOWMANSHIP OF DRESSED POULTRY (20-40 minutes)

SHOWMANSHIP OF FANCY POULTRY (20-40 minutes)

BEFORE YOU GO (5 minutes)

Make sure the members are aware of all the details for the Achievement Program.

DIGGING DEEPER - optional information for seniors, **separate handout**

WRAPPING IT UP!

Project Completion

A Certificate of Completion and a Project Summary have been included in this Guide, pages 59 - 61. Your signature on either of these indicates you feel the member has completed the project to the best of his/her ability. Space is provided for you to add some individual comments to offer encouragement to the member. The Project Summary sheet also asks for written feedback from the member and his/her parents/guardians. (The questions on this sheet have been selected from the informal evaluation sentences, listed below.) Select whichever sheet best meets your needs and make copies for the members.

It is recommended that the certificates not be awarded until the Achievement Program. If you give them out before this time, some members mistakenly assume that they don't need to participate in the Achievement Program.

It Worked For Us!

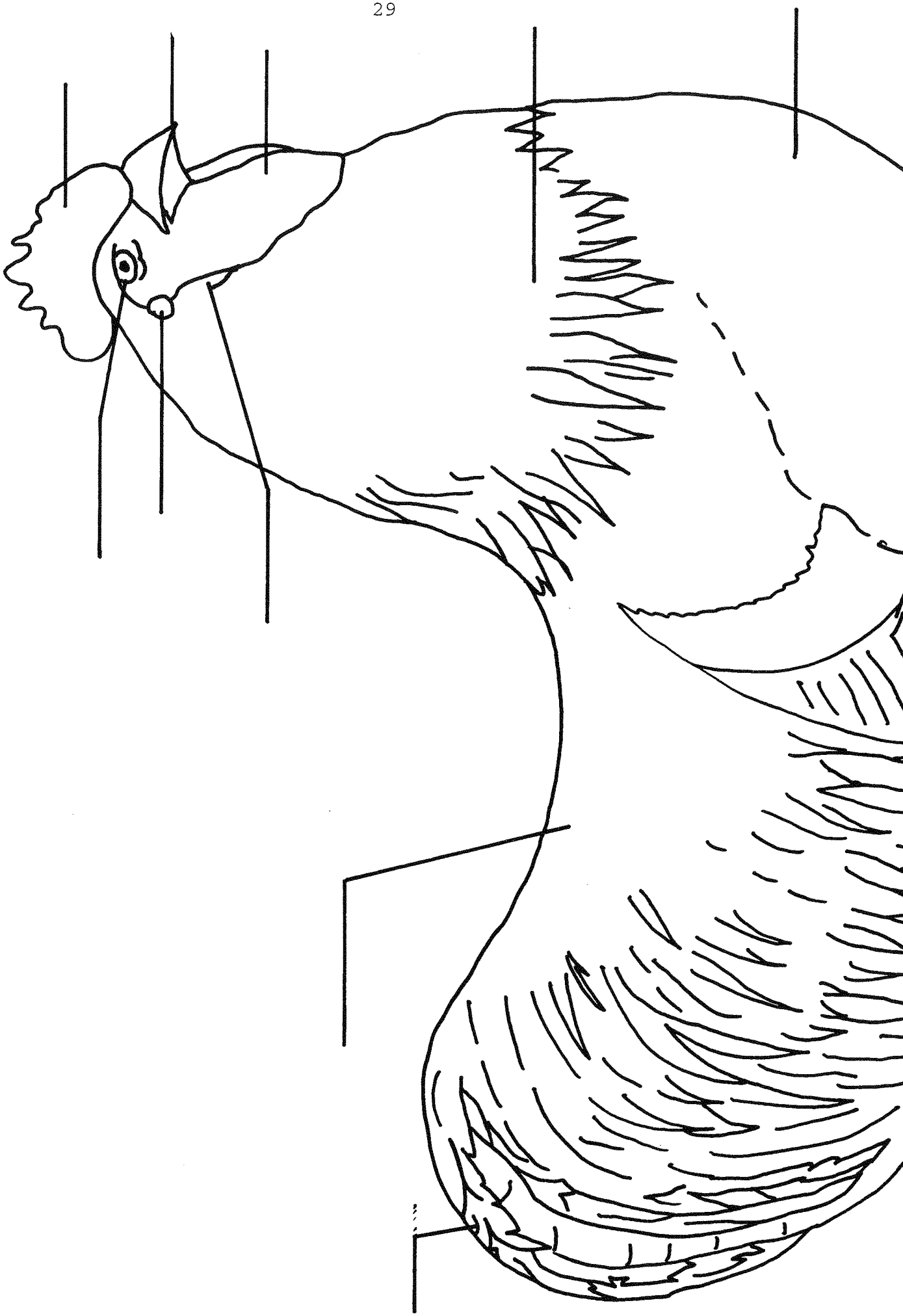
Your experience in leading this club would be helpful to another leader in your area. You are encouraged to make some comments about the project, what resources you discovered locally and the members' feelings about the project and pass this information on to your 4-H Association. The Resource Development Committee of the Ontario 4-H Council is interested in your comments too. Their address is in this Guide, page 7.

Informal Evaluation

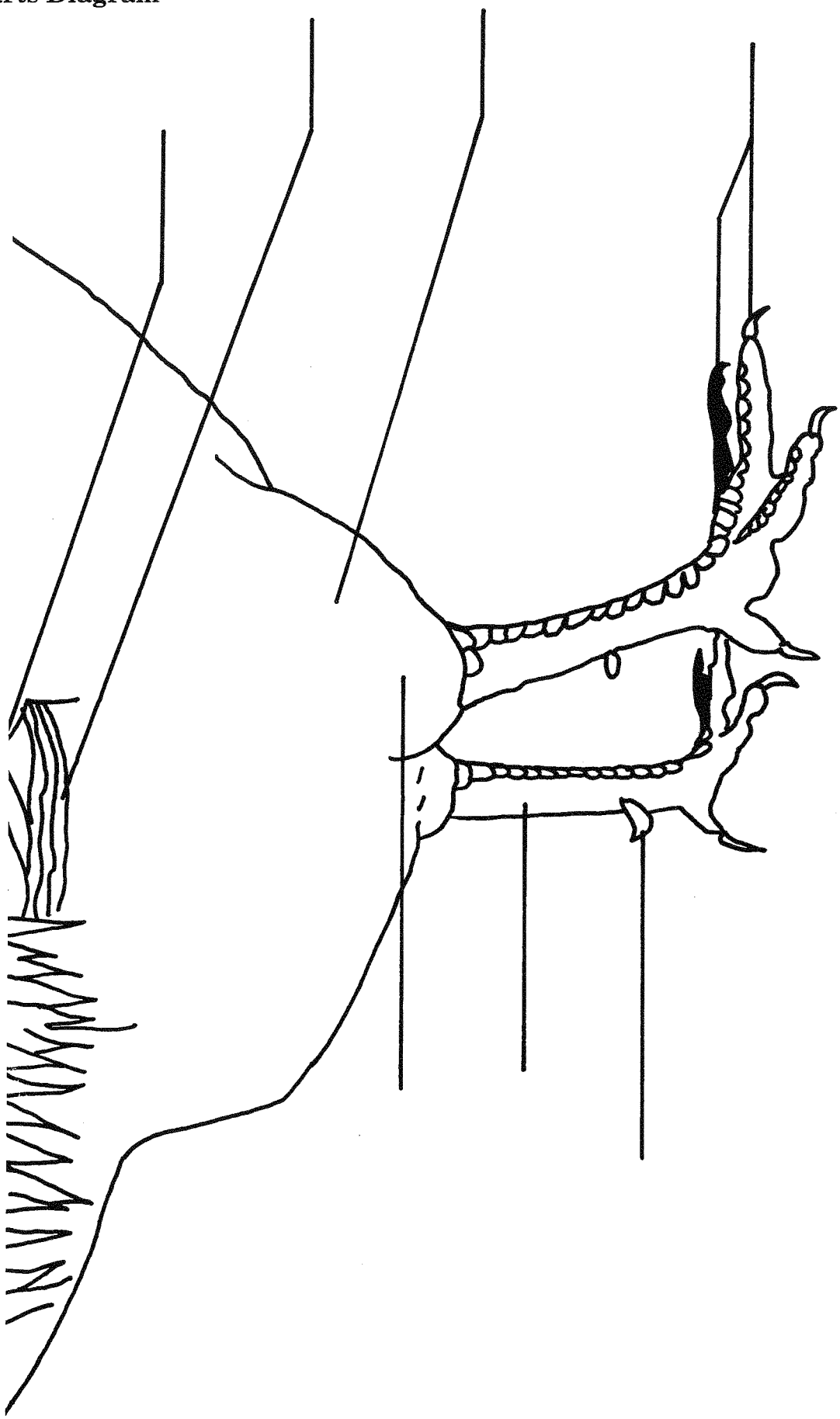
Take a few minutes at the last meeting to do an informal evaluation with members. One way to do this is to ask them to complete one/all of the following sentences.

- I joined this club because ...
- I really enjoyed ...
- I didn't enjoy ...
- I had a hard time ...
- My favourite meeting activity was ...
- My least favourite meeting activity was ...
- If I was to take this project again, I would change ...
- I learned ...
- I've changed ...
- I'm glad ...

Thank You For Being A Volunteer 4-H Leader!

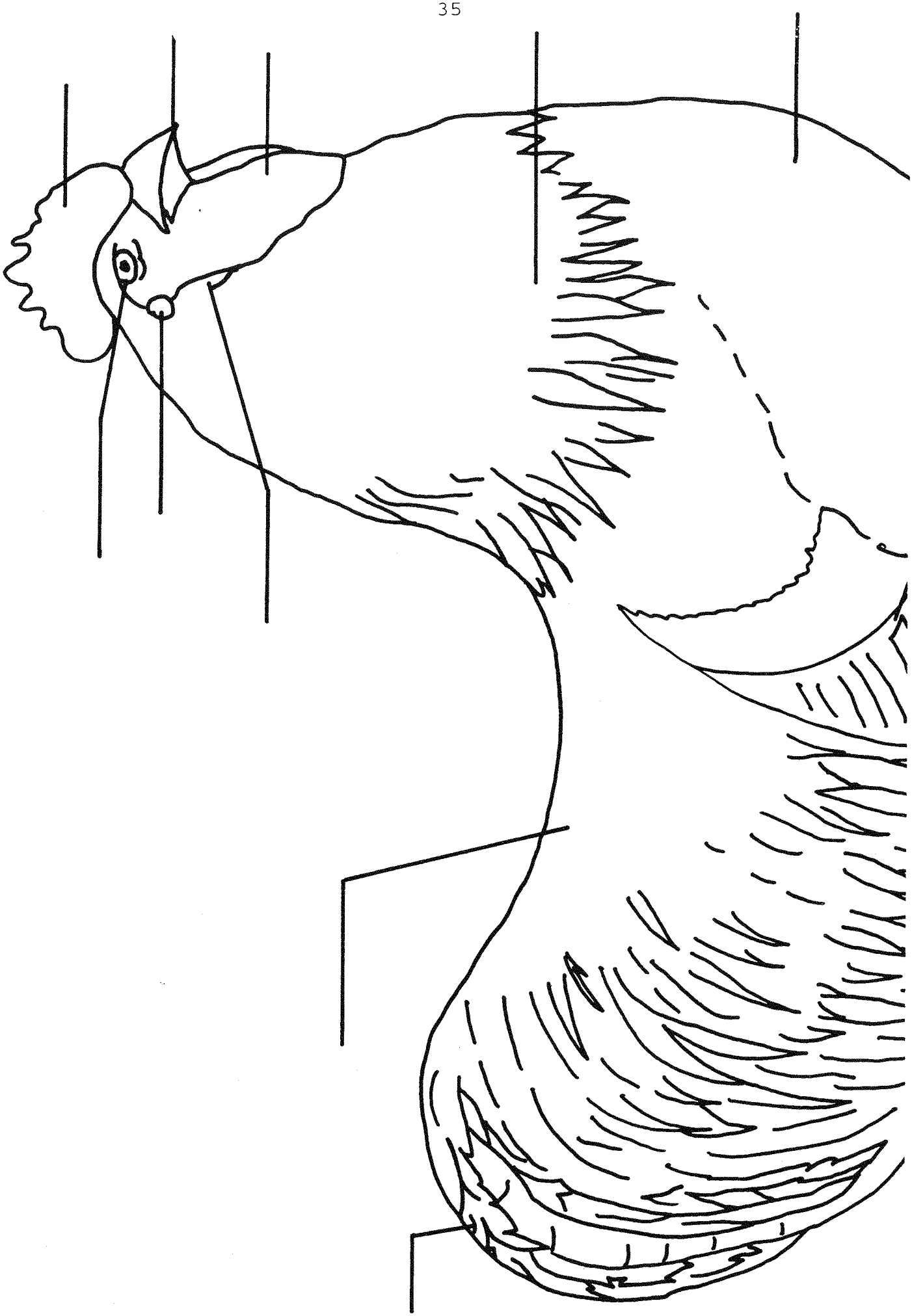


Poultry Parts Diagram

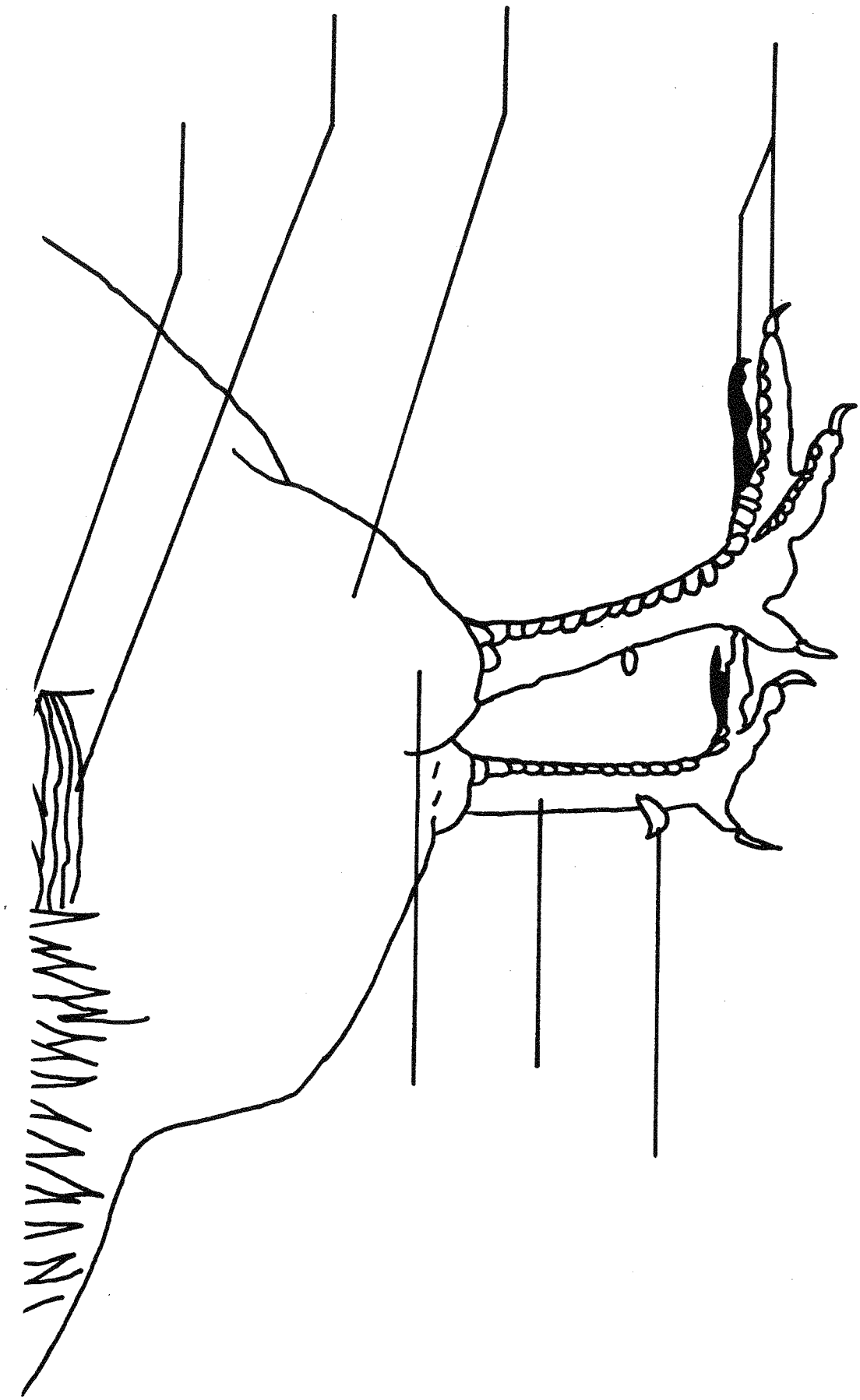


Poultry Parts Cards

COMB	EAR
BEAK	EAR LOBE
WATTLES	SADDLE
HACKLE	SICKLES
BREAST	HOCK
SECONDARIES	SHANK
PRIMARIES	SPUR
THIGH	EYE
TOES	



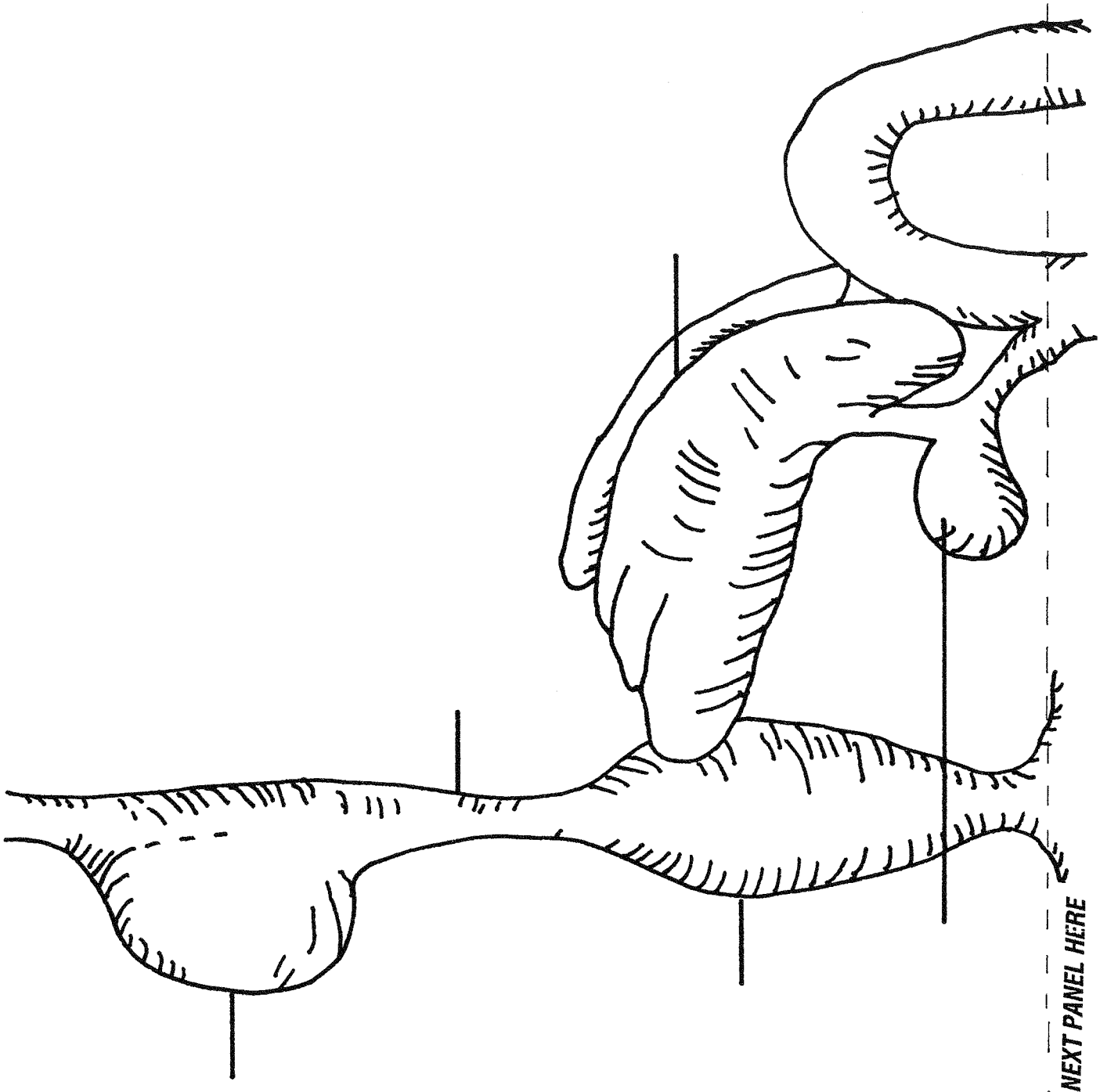
Poultry Diagram Repeated



Poultry Parts Cards Repeated

COMB	EAR
BEAK	EAR LOBE
WATTLES	SADDLE
HACKLE	SICKLES
BREAST	HOCK
SECONDARIES	SHANK
PRIMARIES	SPUR
THIGH	EYE
TOES	

Digestive System Diagram



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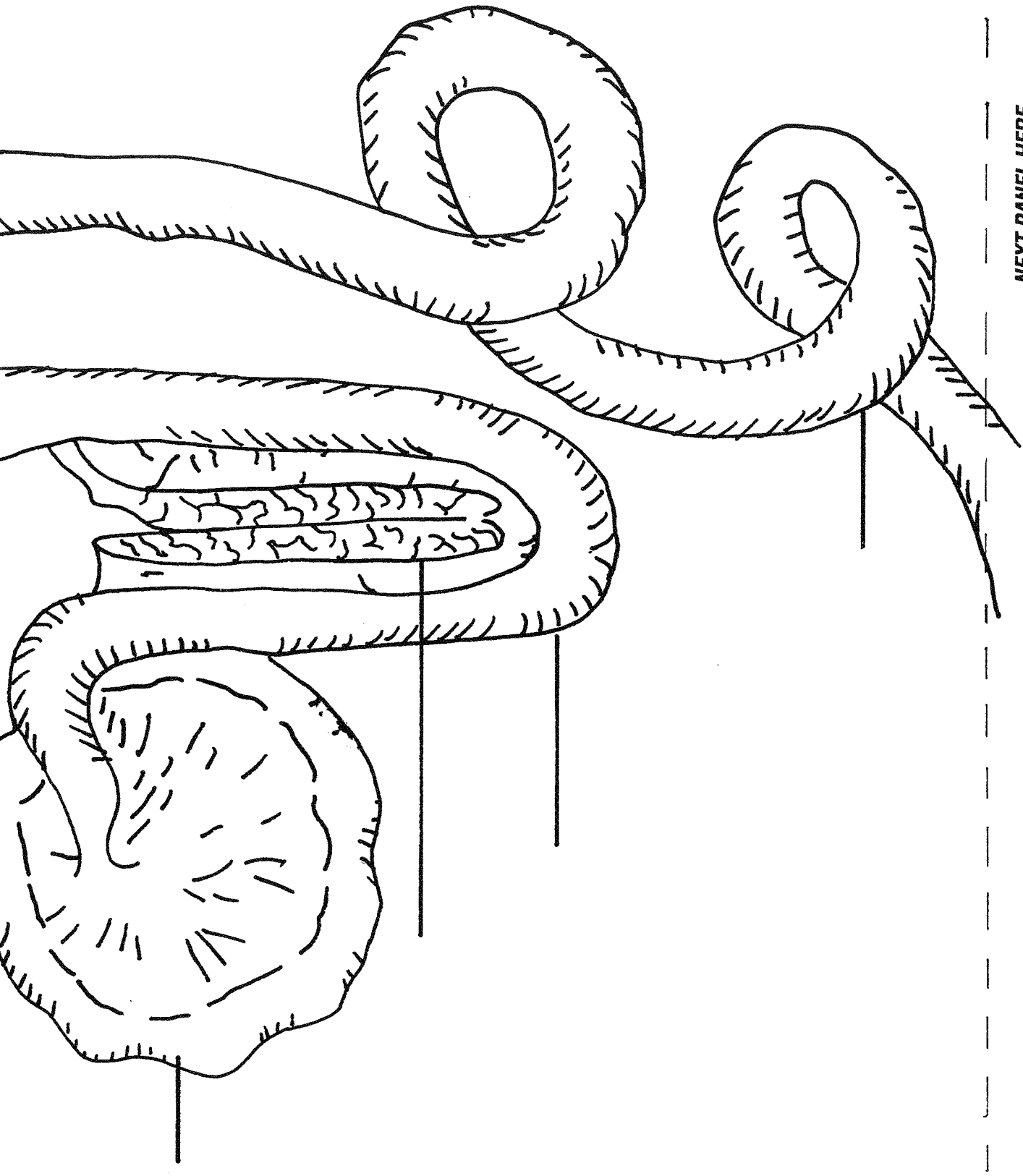
Digestive System Diagram



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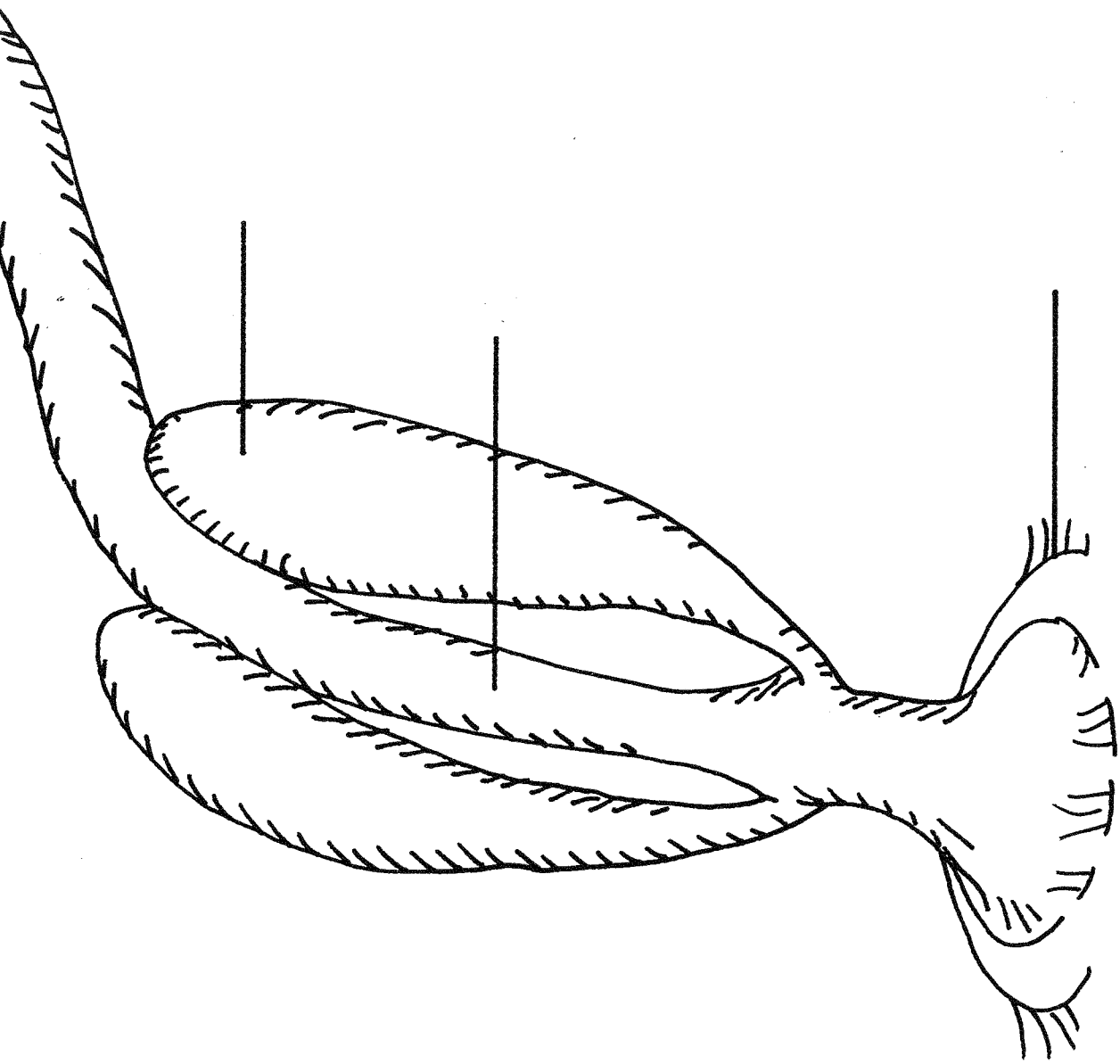
Digestive System Diagram



Digestive System Parts Cards

crop	**esophagus**
proventriculus	**liver**
gall bladder	**gizzard**
pancreas	**duodenum**
ileum	**cecum**
large intestine	**cloaca**

Digestive System Parts Cards

Triple	**Single**
Name three purposes or types of poultry. **Meat; eggs; laying; show, or ornamental.**	What's the difference between a broiler and a roaster chicken? **A broiler is marketed at a lighter weight.**
Double	**Home Run**
Name the two uses for poultry eggs. **Human consumption; to be hatched for future stock.**	Name four things that should be provided from poultry housing. **Any four: protection from weather, predators, fresh air, comfortable environment, clean surroundings, easy access to feed and water.**
Single	**Double**
What % of the cost of production is due to feed costs - 25%, 50% or !00%? **50%**	Name four parts of a chicken. (four new ones if this question has already appeared.) **Any four: comb, ear, beak, wattles, ear lobe, eye, toes, hackle, saddle, sickle, primaries, secondaries, breast, thigh, shank, spur, hock.**
Double	**Triple**
Name four parts of a chicken. (four new ones if this question has already appeared.) **Any four: comb, ear, beak, wattles, ear lobe, eye, toes, hackle, saddle, sickle, primaries, secondaries, breast, thigh, shank, spur, hock.**	Name three types of poultry housing. **Free range, caged, floor managed.**

Home Run	**Single**
Name four structural loads a poultry building must withstand. **Snow, wind, weight of birds, weight of litter and droppings, weight of equipment such as tractors for cleaning, weight of mechanical feeding equipment.**	What's the most important function of a watering system? **To keep a small quantity of clean fresh water in front of the birds in each cage or pen area.**
Single	**Double**
What should you look for in a feeding system to ensure minimum wastage and fresh feed? **A system that places a small amount of feed in the trough or pan often.**	What should a heating system provide in order to produce comfortable conditions for baby chicks? **An overall warm temperature level plus areas that are warmer so birds can select the zone of comfort.**
Single	**Double**
Why does a bird require energy? **As fuel in order to move around, grow, stay warm, etc.**	Name the forms of energy. (You can steal another base and make it a triple if you know which provides more energy.) **Fats and carbohydrates. (Fats provide more energy on a gram per gram basis.)**
Single	**Single**
Why does a bird require protein? **Construction of muscles, skin, feathers, skeleton, internal organs, nervous system, etc.**	Why does a bird require water? **Regulate body temperature, help move food through body, eliminate wastes, etc.**

Single	**Single**
What is the most important mineral for laying eggs? **Calcium (used for shell production).**	What is the function of a gizzard? **Grind feed into smaller particles.**
Triple	**Single**
Name three parts of a bird's digestive system. **Any three: mouth, esophagus, crop, proventriculus, gizzard, small intestine (ileum and duodenum), large intestine, cecum, cloaca.**	Why is grit added to poultry rations? **To help the bird grind the feed in the gizzard.**
Triple	**Double**
Explain the difference between mash, pellets, and crumbles. **A mash is the mixed feedstuffs; pellets are a mash that has been heated and formed into pellets; and crumbles are pellets that have been physically broken apart.**	What is the feed efficiency of a modern chicken broiler? **1.75**
Double	**Single**
Name the two phases of a broiler diet. **Starter ration from day old to 3 weeks, followed by a finisher diet until market age.**	Does a chick need a higher or lower level of protein than an older bird? Why? **Higher because it is growing so fast during the first few weeks.**

Double Two to three weeds before egg production begins, pullets should be put on a diet containing an increased level of protein and energy? Why? **As the hen comes into production, she needs more nutrients per gram of feed.**	**Double** Why should you avoid frequent drastic changes in the diet of bantams? **This may cause hens to stop laying and begin molting or losing feathers.**
Single Why should you clean and disinfect poultry housing and equipment after each group of birds? **To destroy organisms and parasites that could cause disease.**	**Single** Why should you isolate poultry from other livestock? **To prevent crossinfections from other livestock.**
Double What is the best method of disposing of dead birds? **Incineration because heat destroys disease organisms.**	**Double** What is flip-over disease? **Young, healthy and fast growing birds die suddenly and end up lying on their back.**
Double What is a sign of heat stress? **Panting, a stretched out neck, raised wings, decreased activity and death.**	**WALK**

WALK	**HIT BY PITCH**
HIT BY PITCH (BATTER ADVANCE 1 BASE)	

PROJECT SUMMARY - POULTRY

(complete at the end of the project)

A. Member Comments:

1. I joined this club because ... _____

_____

_____

2. I really enjoyed ... _____

_____

I didn't enjoy ... _____

_____

3. If I was to take this project again, I would change ... _____

_____

_____

4. I learned ... _____

_____

5. I'm glad ... _____

_____

B. Parent/Guardian Comments: _____

_____

_____

_____

C. Leader Comments: _____

_____

_____

_____

This project has been completed satisfactorily.

Member _____ Leader_____

Date _____ Leader_____

4-H Ontario

POULTRY NUTRITION

Congratulations on successfully completing this 4-H project.

_____

_____

_____

_____

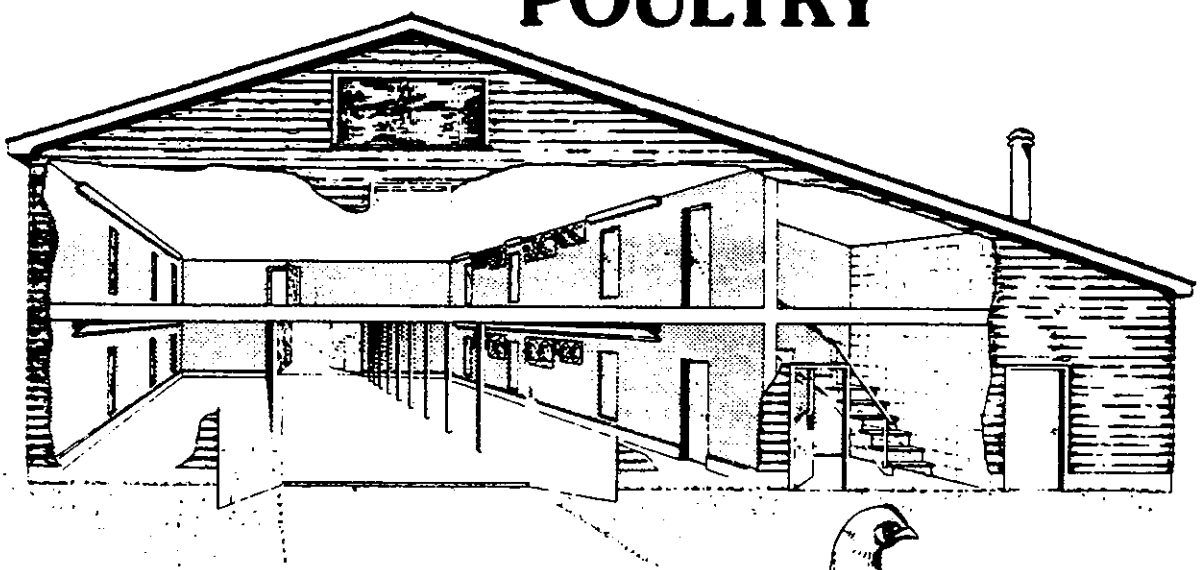
_____

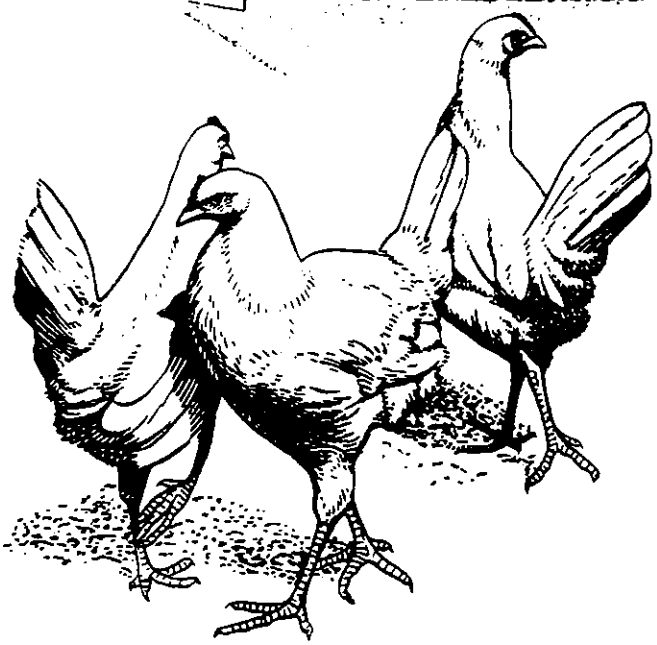
_____

_____	_____
Date	**Club Leader's Signature**

LEARN TO DO BY DOING

POULTRY





NAME _____ AGE _____

CLUB _____ NUMBER OF CLUBS _____

Ontario 4-H Council

Ontario
Ministry of Agriculture, Food and Rural Affairs

4-H 1900 99 ME

The Ontario 4-H Program provides opportunities for the personal development of youth

THE 4-H PLEDGE

"I pledge:
My Head to clearer thinking
My Heart to greater loyalty
My Hands to larger service
My Health to better living
For my club, my community and my country."

TABLE OF CONTENTS

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This project was originally prepared
for the Ontario 4-H Council and updated in 1998 by Dianne Spratt, OMAFRA.
Special thanks to the original advisory committee which included
Ben DePew, Brantford, Cheryl Somerville,
Caledon East and OMAFRA staff.

This project was jointly funded by the Ontario 4-H Council and the Ontario Ministry of Agriculture, Food and Rural Affairs.

POULT99M

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INTRODUCTION

When you realize that over 50% of the cost of raising poultry is due to feed costs, you start to understand the importance of nutrition to your poultry flock. Dig a little deeper and you'll discover that poultry nutrition, housing and health are all inter-related - the reason this project is focusing on them.

OBJECTIVES

As a member of this project you will:

1. Learn about feeds and feeding programs for poultry.
2. Learn about housing requirements for poultry.
3. Find out how to prevent health problems and recognize some common problems.
4. Learn how to judge poultry and poultry products.
5. Learn how to prepare and show poultry and poultry products.

GENERAL REQUIREMENTS

A member will complete a project satisfactorily by:

1. participating in at least 2/3 of his/her own club meeting time;
2. completing the project requirements to the satisfaction of the club leader(s);
3. taking part in an Achievement Program.

SPECIAL ACTIVITIES (Optional)

Individual clubs will decide if junior and/or senior members will be required to complete a Special Activity. Here are some suggestions for Special Activities. Encourage the members to display, present or share in some way the results of their activity. This could be done at a club meeting, the Achievement Program or another 4-H event.

SENIOR MEMBERS (Optional)

1. Choose a disease which is caused by poor nutrition or housing. Research the disease and learn more about cause, prevention and treatment.
2. Prepare a photo identification chart for poultry diseases. Select at least six different diseases and take photos of birds with those diseases. Include a list of symptoms for each disease.
3. Interview two commercial poultry farmers in the area. Prepare a report on their nutrition and health management practices.
4. Develop a board game on this club's topic areas which could be played by your 4-H club.
5. Complete a journal with weekly entries for expenses, feed consumption, weight or egg production, health of birds, and any other information desired.

MEETING SCHEDULE

	DATE	TIME	PLACE
MEETING ONE			
MEETING TWO			
MEETING THREE			
MEETING FOUR			
MEETING FIVE			
MEETING SIX			
ACHIEVEMENT PROGRAM			

FEEDBACK

The 4-H Resource Development Committee of the Ontario 4-H Council reviews and evaluates 4-H resources. Comments and suggestions about 4-H manuals and guides are always welcome. They may be sent to the following address.

4-H Resource Development Committee
Ontario 4-H Council
R.R. #1 Thornloe, Ontario P0J 1S0
Phone/Fax: 1-800-937-5161
E-mail: lduke@ntl.sympatico.ca

GET INVOLVED

Be willing to let your name stand for an executive position. It is a rewarding and fun experience. Following your club's elections, complete this club executive chart.

CLUB EXECUTIVE:

	Name	Phone
PRESIDENT	_____	_____
VICE-PRESIDENT	_____	_____
SECRETARY	_____	_____
TREASURER	_____	_____
PRESS REPORTER	_____	_____
OTHER	_____	_____

CLUB MEMBERSHIP:

Members, Phone **Members, Phone**

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Leaders, Phone **Leaders, Phone**

_____ _____

_____ _____

4-H Association Contact, Phone **OMAFRA Contact, Phone**

_____ _____

Welcome to the World of Poultry

ROLL CALL

Name one thing you know about poultry and one thing you would like to know.

****

YOU'VE ARRIVED!

Welcome to the world of poultry where you'll find an amazing variety of birds.

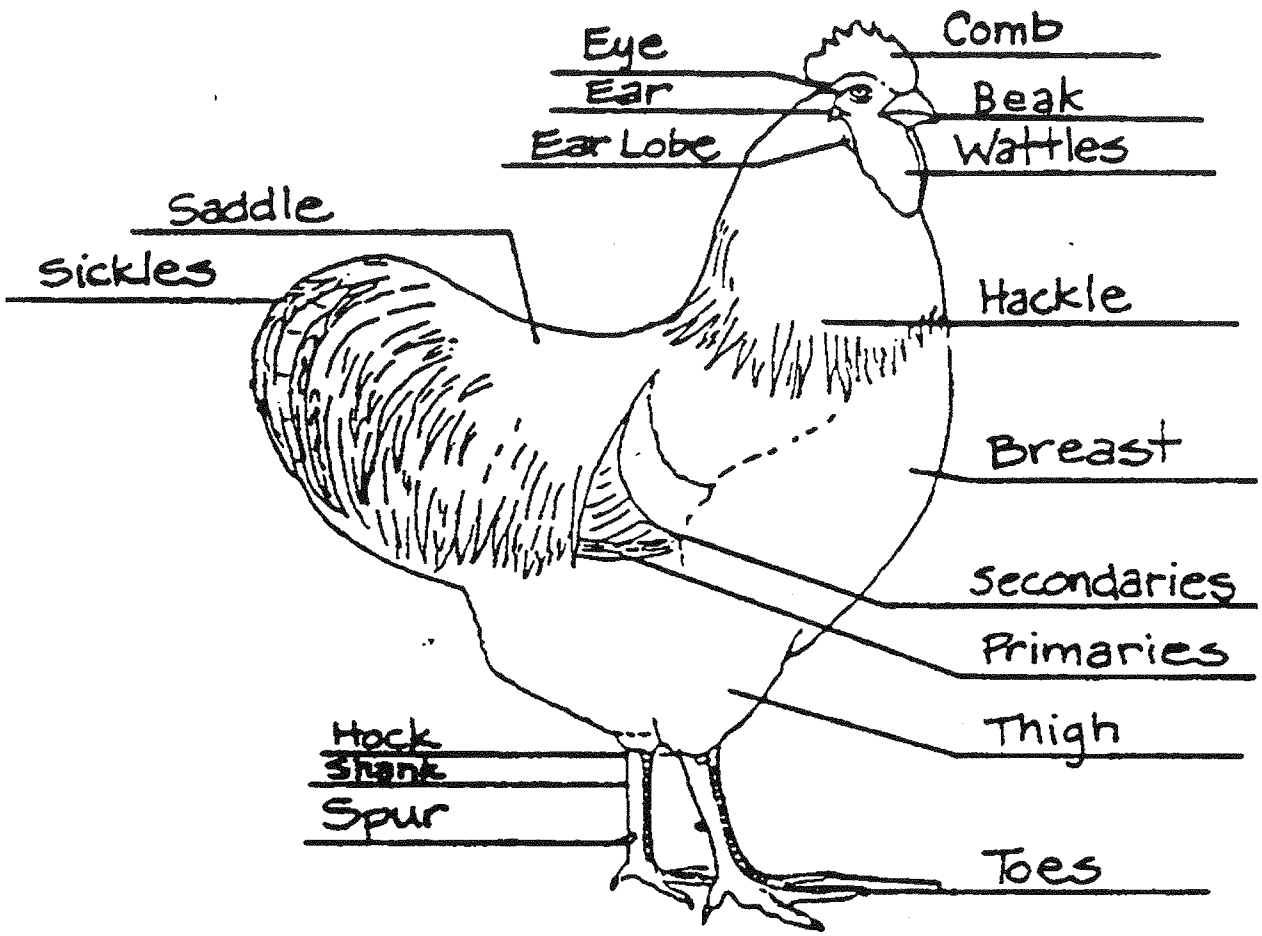
Let's start with the egg. The egg-producing or layer bird is raised for the production of eggs. Easy so far, isn't it? These eggs may be graded, candled and then marketed for human consumption or if the egg is fertilized, it will be incubated for approximately 21 days so that it will hatch into a chick or poult. These chicks or poults may be raised either for replacement breeder or layer flocks or raised strictly for market as a meat-type bird ... which brings us to meat.

Meat-type birds are raised for their ... you guessed it, meat! Examples include chickens, turkeys, geese and ducks. Birds that are marketed as broilers are lighter weight than those called roasters.

Can you think of a third type? It's known as fancy, show or ornamental poultry and is bred for the beauty of colour and shape. There are about 175 varieties of chickens in this category as well as many varieties of turkeys, ducks and geese.

POULTRY PARTS

Before you can talk like a poultry producer, you need to know the parts of your bird. The diagram below is a chicken but the body parts apply to most birds.



FITTING THE PUZZLE TOGETHER

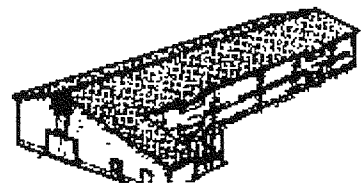
This 4-H project will cover poultry housing, nutrition and health. At first glance those might seem like three completely separate topics but they do tie together.

Poultry housing is a logical place to start since that's where the bird spends most of its time. There are all types of places to raise poultry. Here is a list of the types of poultry housing:

- open range
- traditional chicken coop, colony house
- caged layer unit
- single or double storey floor-raised broiler barn
- turkey barn
- breeder flock barn
- small shed with access to yard

Whatever the housing looks like - whether inside a barn or outside in a field - it must provide what the bird needs:

- protection from weather
- protection from predators
- fresh air
- convenient feed and water
- clean surroundings



Why? So the birds can stay healthy and do what they do best - grow, produce meat, or produce eggs.

WHAT ABOUT NUTRITION?

What would happen if you put water in your tractor's fuel tank instead of diesel fuel? It wouldn't perform very well for you, would it? What if you gave it fuel but held back on the oil and grease for a few weeks? It might run for a while but it would stop eventually and it certainly wouldn't be at its peak performance for those few weeks.

Your birds operate much the same way! They need the proper fuel or feed to produce meat or eggs and they need those little things like vitamins or minerals (oil and grease) to really reach peak production.

Is it hard to think of your bird as a well-tuned performance machine? The nutrient requirements of poultry, particularly broiler chicks and layer hens, are defined more precisely than for other domestic animals. That is due to the nature of the birds and the very specific conditions under which they are produced and because of the short period of time for production, particularly for broilers.

And did you know that over 50% of the cost of production of raising or maintaining poultry is due to feed costs?

MAKING THE CONNECTION

OK, so housing and nutrition are both important but what are the connections between them and health? Here are some to think about:

1. If there is not enough ventilation or fresh air flow in a barn, the birds get hot and eat less. That will save you money on feed costs, but the nutrients they need for meat or egg production will not be provided and you end up the loser! What's the connection?
   - **Housing and Nutrition**

2. If the barn or pen is not cleaned thoroughly between flocks, then parasites or viruses that cause disease can still be hanging around waiting to ambush the next birds that come along. What's the connection?
   - **Housing and Health**

3. If a nutrient like calcium is left out of your laying flock's diet, then it doesn't receive the calcium it needs to form strong egg shells or maintain its own body. What's the connection?
   - **Nutrition and Health**

Obviously, there are some connections between nutrition, housing, and health. Can you think of any other examples?

WHAT'S NEXT?

In the next five meetings, you'll be finding out more about housing, feeding, and keeping poultry healthy. These are some things we'll cover that will be useful to you at home:

- how to judge a chicken
- why grit is important to make the gizzard work
- what to feed your bird
- and more!

BEFORE THE NEXT MEETING

1. Give some thought to the ideas for an Achievement Program so you will be prepared to discuss it with the club at a future meeting.

2. Members that will be raising birds should complete the Project Information Sheet located on page 47 of this manual.

JUDGING TIPS (OPTIONAL)

LEARNING TO EYEBALL

Probably one of the reasons you joined 4-H was to learn something practical. One of the most useful areas of 4-H is judging. It lets you make decisions, learn to really observe something, and explain your decisions to other people. These are skills that will be useful whether you are a poultry farmer, a criminal lawyer, a teacher or any other occupation.

Poultry weights should be monitored regularly so that feeding programs can be altered when flocks are not maturing properly. Breeding organizations routinely publish weight ranges by week of age for their strains. Experimental studies and field research have shown that laying flocks will perform best when their average weights are kept within the recommended range.

One skill that is practical and is the basis for judging is the ability to "eyeball" or observe a bird. A bird's weight is something that a poultry raiser does need. For instance, a farmer goes out to check the turkeys on range and needs to determine whether they should be sent to the processor this week or next week. He/she estimates their weight and decides they won't be ready until next week. When next week comes, he/she should take a scale to the field and be more precise about their average weight but for now a skill he/she learned back in the 1962 4-H poultry club has helped him to make a decision.

So how can you learn to judge weights?

1. Find something that you know the weight of and are familiar with such as a pound of butter or a five pound bag of sugar or a 40 kg bag of feed. Lift it up. Concentrate on how it feels in your hands and arms. Remember how much tension it puts on your muscles.

2. Now pick up a bird and compare it to the weight you just had in your hands. Is it lighter or heavier? How much lighter or heavier? Estimate its weight. Now weigh the bird on a scale and see how close you came. Keep practicing and weighing until you are consistently within 2% of the accurate weight.

3. Can you be accurate in either the metric or imperial system? If not, you can practice that too.

4. Sometimes you will have to judge weights when you can't pick up the object. In that case, you really do need to eyeball it. Again, try to establish a benchmark bird or animal and compare the size and bone structure of the one you are judging to it.

Bird Number	**Estimated Weight (A)**	**Actual Weight (B)**	**Difference in Weight (B - A)**	**Accuracy (%)** $\frac{B - A}{B} \times 100$
e.g. #1 (heavy turkey)	11.33 kg	12.24 kg	0.91 kg	7.4%

There's No Place Like Home

ROLL CALL

Name one thing you must think about if you were building a home for birds.

****

HOME SWEET HOME

Some people live in houses. Others live in apartments. There are some who live in trailers or on boats. There is a lot of variety in where people live.

Birds too! Some live in cages in a barn, some live outside, some roam freely in huge barns.

Listed below are the things that every bird needs to have in its home, and why each of them are important.

Needs	**Importance**
• Ventilation	for fresh air, to maintain constant temperatures
• Shelter	protection from predators
• Feeding	easy access to feed for growth and development
• Waterers	constant access for growth and development
• Manure Disposal	to control disease
• Lighting	to regulate egg production, growth
• Heat	to keep young birds warm

WHAT TO LOOK FOR IN POULTRY HOUSING

Likely you have seen chickens, ducks, geese or turkeys being raised outside in the summertime. If you have poultry year-round, you will need some type of shelter. Since most poultry in Ontario is in a building of some type at least part of the time, let's take a look at what makes a good shelter for poultry.

Barns for various operations, such as turkey, egg or broiler production may differ greatly in size, looks, and what's inside. However, they also have some similar requirements. A good location and a well-insulated building equipped with proper ventilation, heating and lighting systems are important in any operation.

A. LOCATION

Choose a well-drained site, large enough both for your present needs and if you want to expand in the future. Keep buildings separate to protect against fire spreading and to allow the wind to ventilate the surrounding space.

There is lots to think about if you are building a barn. Is there water nearby for birds to drink and for fire protection? Where is the closest access to electrical power? Where will the manure go? Is there enough room for storage of things like feed?

B. INSULATION

The building needs to be insulated against the summer heat and the winter cold. If it isn't well-enough insulated, it is harder for the ventilation system to work.

C. VENTILATION

There are basically two parts in a ventilation system.

1. Places where air can come in, usually called air-intake slots.
2. Places where air can leave, usually with the help of exhaust fans.

Some barns also have circulating fans to move the heat, dry the litter, and move fresh warm air down to the bird level.

A good ventilation system:
- keeps litter dry;
- prevents condensation and sweating;
- maintains a suitable and even temperature;
- prevents drafts;
- provides fresh air evenly to all poultry in the barn.

D. HEATING

A heating system is necessary for certain types of production - raising baby chicks, for instance - and to provide extra heat to improve ventilation during cold weather. Your choice will depend on the cost of equipment, whether equipment is available or not, the cost of available energy, and the cost and availability of insurance based on the choice of heating equipment. Whatever you choose, it must be easy to regulate and must operate safely.

TEMPERATURE GUIDE FOR BROODING CHICKS AND TURKEY POULTS		
Age of birds, weeks	**Suggested temperature under brooders, 50 mm above floor near edge of hood, EC**	**Temperature of building, EC**
Up to 1	35E	24-27E
1-2	32E	21-24E
2-3	29E	23-24E
3-4	27E	22-23E
4-5	21-24E	21-22E
Over 5	Reduce by 1E per week to 18E	

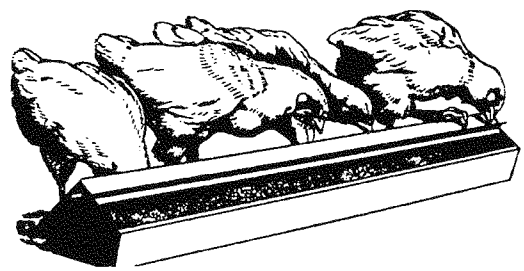
These temperatures are guides only; always adjust the temperature according to the behaviour of chicks. If it is too hot, the birds spread out along the cardboard enclosures; if too cold, they stay under the brooders and stop eating and drinking.

E. LIGHTING

Natural light doesn't always provide the proper day length required to keep birds growing or to keep them in regular egg production. For that reason, artificial lighting is used most of the time in modern poultry barns.

F. FEEDING EQUIPMENT

Look for a feeding system that will:

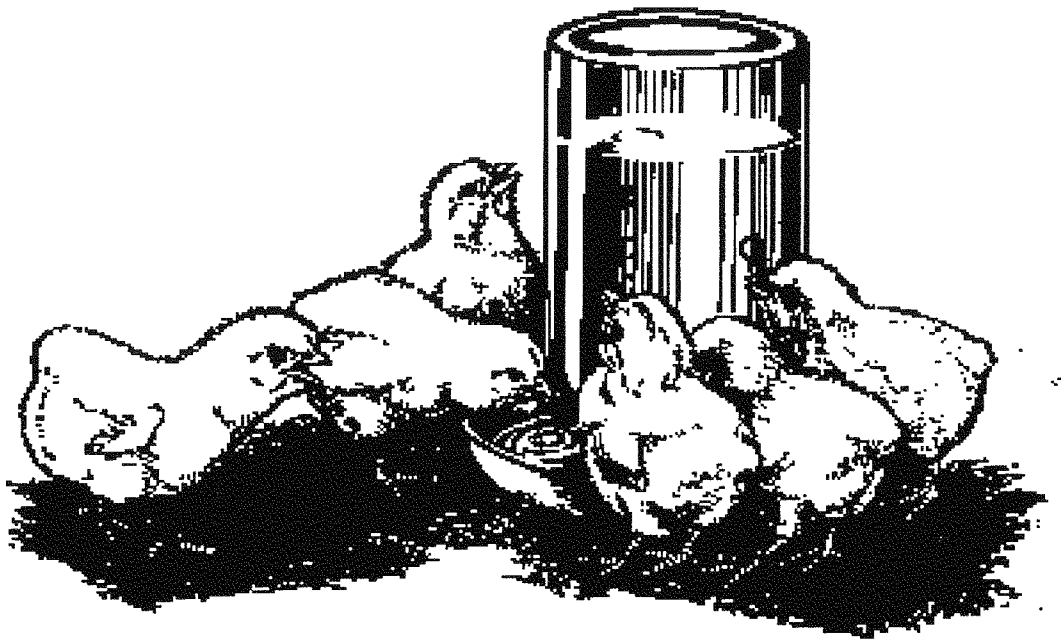


1. Provide adequate feeding space.
2. Be laid out so that all birds are close to feeders.
3. Control feed wastage.
4. Provide uniform quality and quantity of fresh feed to all feeders or troughs.
5. Save labour.
6. Be low in cost.
7. Be easily maintained, cleaned, and moved out of the way for cleaning.

For minimum wastage and fresh feed, a system that places a small amount of feed in the trough or pan often is best. Automatic feeding systems are used a lot.

G. WATERING EQUIPMENT

A good waterer automatically keeps a small quantity of clean fresh water in front of the birds in each cage or pen area. Since water is as important as feed, there must be enough waterers and they must be located so that the birds have complete access to them. Arrange feed hoppers and drinking troughs so that the birds don't travel more than 1.2 to 1.5 m to drink. They must be maintained, kept clean and leaking valves repaired. The watering system may also be used to medicate the flock.



A CHECKLIST

Every poultry barn is different. If your club visits a barn, or if you have a poultry barn at home, you may want to ask yourself the following questions.

A) **Location** *How close to other buildings?

*Where is the water source?

*Where is the power source?

B) **Insulation** *Where and how is it insulated?

C) **Ventilation** *How many air-intakes are there and where are they located?

*How many fans are there and where are they located?

D) **Heating** *Describe the heating equipment.

*What is its energy source?

E) **Lighting** *How many lights are there? How far apart are they? How many hours in a day are they on now?

*Where are they located?

F) **Feeding Equipment** *Describe the feeding equipment.

G) **Watering Equipment** *Describe the watering equipment.

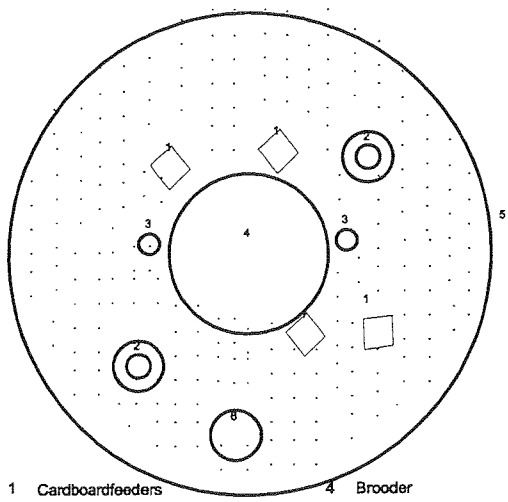
H) **Waste** *How is the barn cleaned out?

*Where does the manure go?

*How are dead birds disposed?

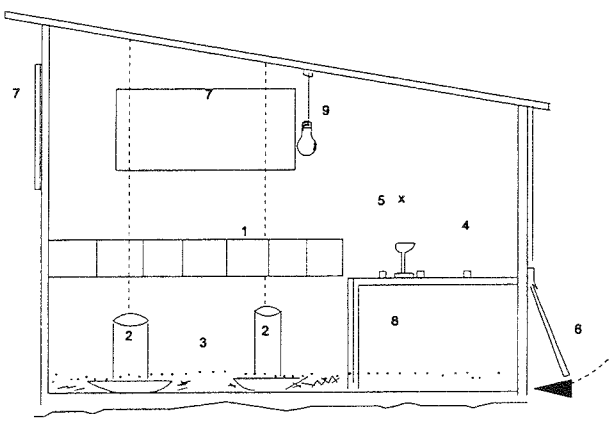
HOUSING A SMALL POULTRY FLOCK

Here are some sample floor plans for raising poultry on a smaller scale. Remember, all of the items discussed under "What to Look for in Poultry Housing", also apply here.



To raise your own birds, buy day-old chicks from a hatchery that vaccinates for Marek's disease. Brood the chicks under electric or gas heat, starting them at 35EC at the level of their backs for the first week. Drop the temperature 3EC each week until they are 4-5 weeks old. The heat can be shut off then depending on the time of year and temperature of the pen. Keep the chicks close to the heat source by using a brooder guard or similar equipment for the first 7-10 days. Place one water jar per 50 chicks close to the heat and distribute chick starter, mash or crumbles on feed plates or chick starter box lids. These can be replaced with one hanging feeder per 30 chicks at 7-10 days. Set the feeder low so that the chicks can reach the feed. They will climb into the feeder to eat for the first few days.

LAYING HOUSE



Here's a good plan if you wish to keep a few egg-producing chickens for your own use.

- Allow 0.15 m^2 of floor space per bird for Leghorns and up to 0.25 m^2 for heavier birds. Insulate ceiling and walls.

- Cover 2/3 of the floor area with 10-15cm of dry sawdust or shavings.

- Supply roosts at 6 weeks of age. The remaining one-third of the floor is covered by the roosts and droppings pit. The pit has a solid plywood front, and a top made of wire to keep the birds out. Place the roosts (5 x 5 cm wood) 36 cm apart along the length of the pit above the wire. The birds are then roosting over a large box which collects the droppings.

- Make it easier to clean the droppings pit, by building clean-out doors across the bottom of the back wall adjoining the pit. These doors can be raised and the manure removed without disturbing the birds.

- Install windows that slide up and down on the outside walls. Attach 2.5 cm poultry netting to the inside of the window openings to stop layers from roosting on the window sills, and to keep out wild birds.

- Allow one 60 watt bulb for every 13 m^2 of floor area.

- Use one hanging feeder, capable of holding 20-25 kg of feed for every 30 layers. Keep the feeder pan about the height of the birds' shoulders.

- Install waterers over the pit between the roosts so that any spilled water goes into the pit and not into the litter.

- Attach nests to the wall 60 cm above the floor. One nest 30 cm square and 30 cm high is enough for seven birds.

BEFORE THE NEXT MEETING

1. Collect a newspaper or magazine article about animal welfare issues.

2. Bring a sample of poultry feed to the next meeting with a label identifying what it is.

3. If you are planning on doing a project, decide what it will be.

JUDGING TIPS (OPTIONAL)

JUDGING EGGS

There are three steps to follow in judging eggs. The first is to check for cleanliness and uniformity. Look for any dirt or manure on the eggs. Within a group of eggs, check to see that they are the same type, colour, and size.

The second step is to candle them to detect bloodspots, cracked eggs and embryo growth. You can buy a candler or make one. A suitable light can be made by cutting a 1.25 inch diameter hole in the end of a coffee or juice can. Insert a light fixture through the lid, using a 40 watt bulb. The interior of the egg can be viewed by holding the large end up to the hole cut in the bottom of the can. As light passes through the egg, twirl the egg several times. If blood spots, cracks, or embryo development are present, you will be able to detect them. Follow the directions on the next page to make another type of candler.

Remember to candle eggs in a darkened area. To check for fertility of eggs, you can readily see the development of blood vessels three days after setting by using the candler. Early dead embryos can be detected by a ring of blood around the interior of the egg.

The third step is to break the eggs open and examine the yolk and white (albumen). Eggs in Canada are graded either Grade A, B, or C. Grade A eggs have a firm albumen or white, a yolk shadow that is slightly distinct, a round yolk that is reasonably well centred, and an air cell that is not in excess of 1/8 inch or 3 mm in depth. As well the shell must be clean, normal in shape and free from rough areas or ridges, and uncracked.

If it has been a while since you have judged, you will want to review the beginning pages of the 4-H Judging Handbook to get reacquainted with the basics of judging and giving reasons. A scorecard for judging eggs is included in the Judging Handbook (4-H-1550-91).

A HOMEMADE CANDLER

MATERIALS

1 60 watt bulb
1 porcelain socket
1 piece lumber 1" x 6" x 38"
2 number 8 round head wood screws, 1" in length
cleats
1 piece plywood 3" x 6-3/8" by 6-3/8"
1 male electric plug
4 small brads
6 feet of extension cord
16 seven-penny coated box nails

PROCEDURE

1. Cut four pieces 8" long from the 1" by 6" board.
2. Drill a 1" hole in one of the pieces as shown in figure 1.
3. Bevel the edge of the hole.
4. Nail the four 8" pieces together as shown in figures 2 and 3.
5. Cut the remaining piece of board to fit inside the candling box as a bottom.
6. Before nailing the bottom piece in place, screw the porcelain socket to the centre of this piece.

7. Wire socket with extension cord and then nail bottom in place.
8. Drill a hole in back of the candler for extension cord, and wire male plug to cord after feeding the cord through the hole (see figure 4).
9. Nail two small cleats to the 6-3/8" by 6-3/8" plywood. This piece will act as a removable top that will be held in place by the cleats.

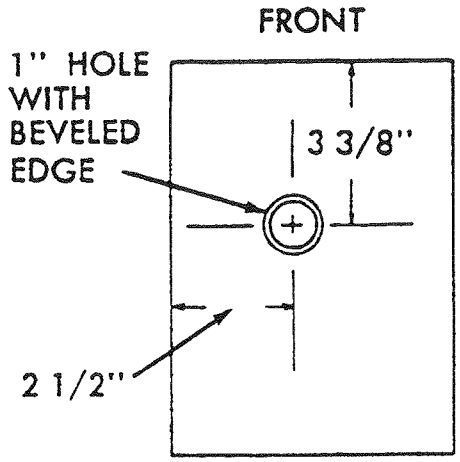


Figure 1

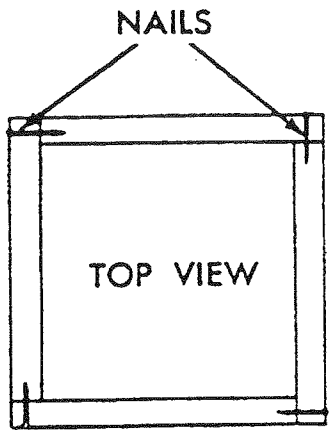


Figure 2

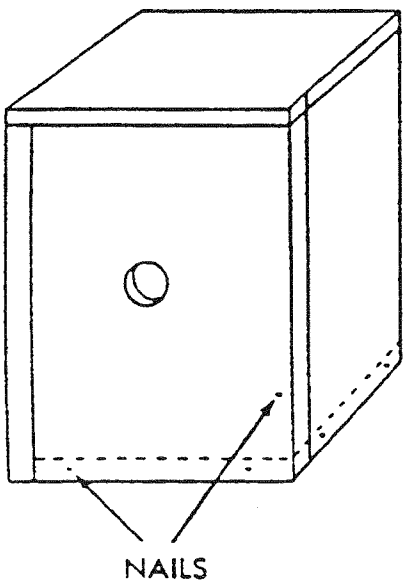


Figure 3

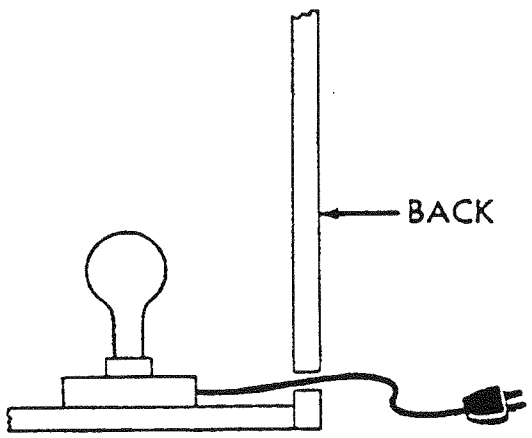


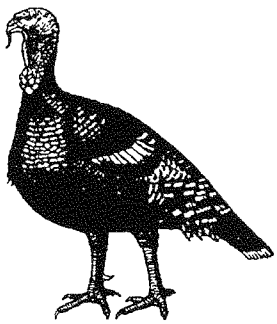
Figure 4

Eating Like a Bird

ROLL CALL

Name two things you ate or drank today. Try not to repeat something another member has said.

****



Has anyone ever said to you, "You're a turkey!" While that may or may not be true, there is some resemblance. A turkey or any other bird requires the same components from its diet as you do: energy, protein, vitamins, minerals and water.

WHAT AM I?

PROTEIN

I help in the construction of muscles, internal organs, skin, feathers, nervous system and bones.

MINERALS

I am needed for the construction of the skeleton and for the normal structure and function of every cell in the body. I am used by the bird in both large and microscopic amounts. I am found in the premix.

WATER

Without me a bird dies. Some of my jobs include regulating body temperature, helping food move through the body, cleaning out wastes, and lubricating joints. Birds consume twice as much of me as my other four friends put together.

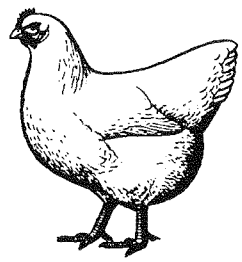
ENERGY

I am used for fuel and have two faces: carbohydrates and fat. If it wasn't for me, the bird wouldn't eat, move around, grow or stay warm.

VITAMINS

Although I am found in very small amounts, a bird needs me to grow and stay healthy. Some of my type dissolve in fat, while others dissolve in water.

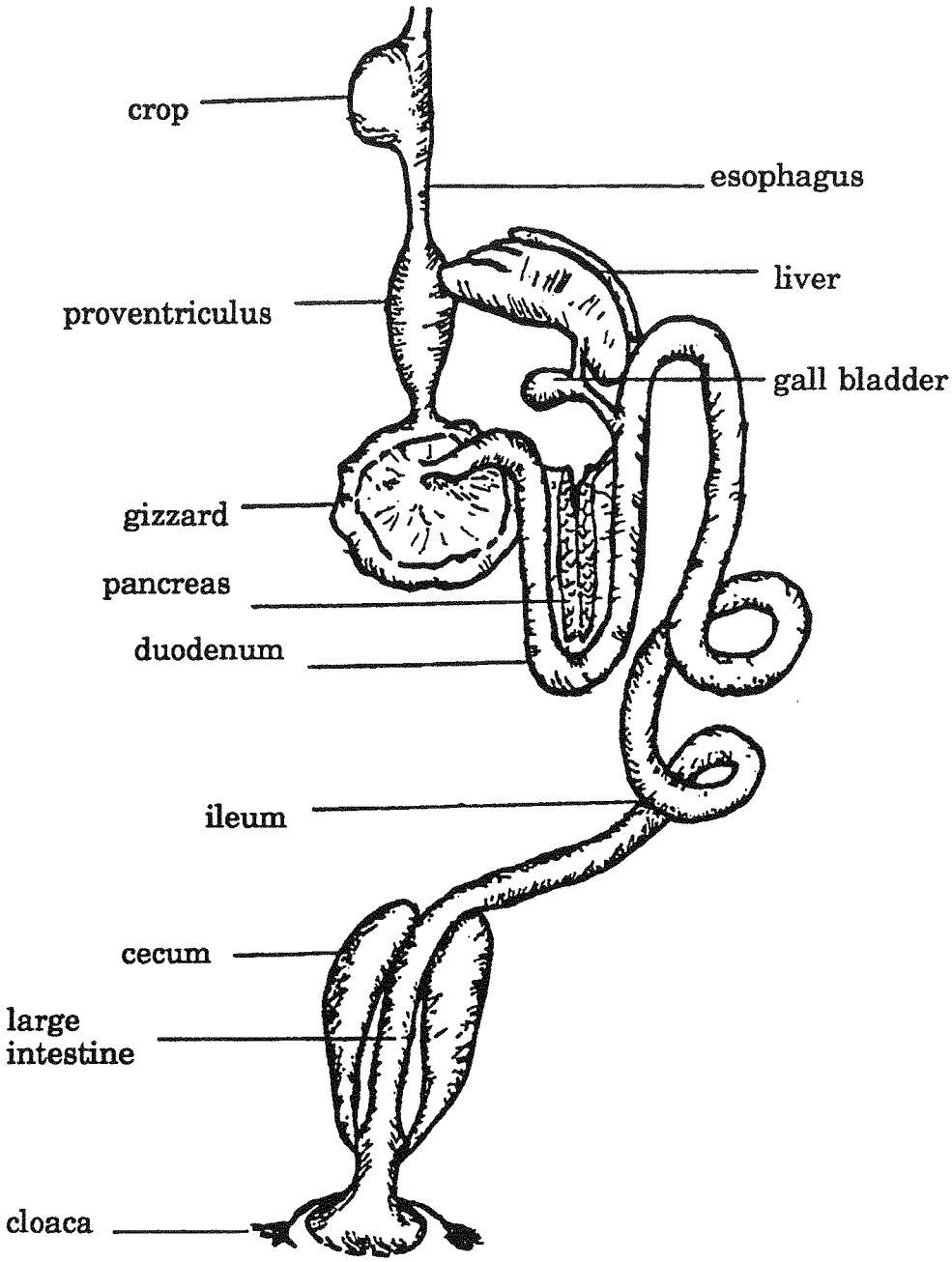
DIGESTIVE SYSTEM OF POULTRY



Has anyone ever called you "chicken"? Again, that may or may not be true but chickens and other poultry have only one stomach just like you. Let's take a look at where and how food moves through a bird's body. The parts of a bird's digestive system are in the left column. They are in the same order as they appear in the body. On the right side is the function of each body part.

PARTS	FUNCTIONS
Mouth	Entry point for feed
Esophagus	Transports feed to crop
Crop	Moistens feed and secretes enzyme amylase
Proventriculus	Releases digestive juices and acids to break down feed
Gizzard	Grinds feed into smaller particles
Small intestine	Absorbs nutrients into the bloodstream (includes duodenum and ileum)
Large intestine	Absorbs nutrients into the bloodstream
Cecum	Nutrients not used pass through here
Cloaca	Exit point for waste

THE DIGESTIVE TRACT



FEEDSTUFFS FOR POULTRY

SELECTING INGREDIENTS

There are several things to think about in choosing ingredients for poultry rations. The taste is important. The feed may naturally taste good but it could be affected by moisture, the variety of ingredients in the ration, or contaminants such as moulds.

Habits of the birds may also alter what they eat. For example, birds used to eating whole or cracked corn may not eat when fed whole barley as a source of grain. Birds may be attracted to feeds by light reflections from granite grit or differences in colour. Physical condition of the feed such as the particle size can influence feed consumption.

Nutrient content is a concern too since it differs greatly between different sources. It may be affected by fibre content, presence of fat, or amino acid balance.

Last but not least, consider whether a feedstuff is available on the market and what it costs.

SOURCES OF NUTRIENTS

Grains serve primarily as sources of energy, mainly from starch. High energy grains suitable for poultry are corn, wheat, triticale, and oat groats. Medium energy grains are barley and heavy oats while oats are a low energy grain. Corn, wheat, and barley are the most important grains currently used in poultry rations. Vegetable or animal fats are often used as energy sources and can be used as a replacement for energy usually furnished by grains.

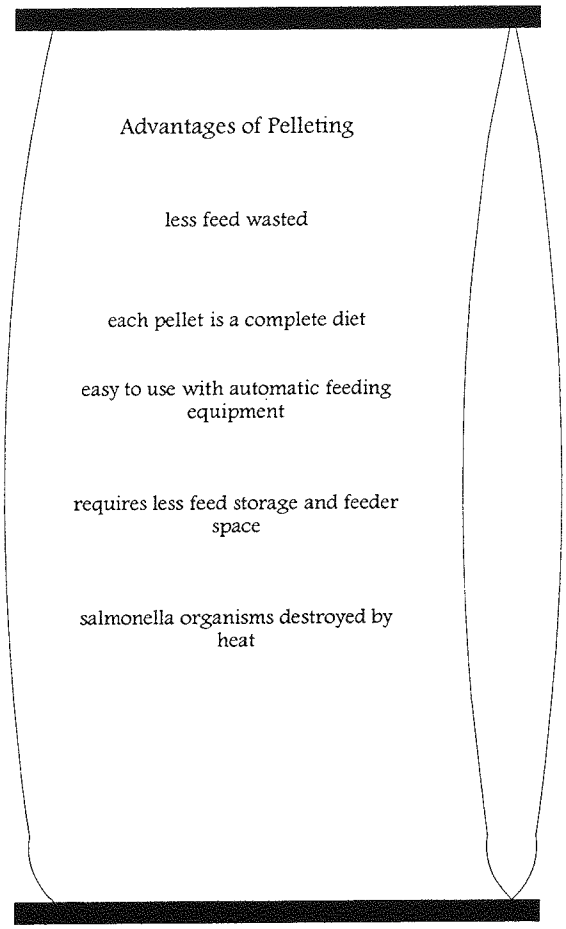
Protein in poultry feed in Ontario comes primarily from soybeans. There are several other potential sources of protein including alfalfa meal and animal protein sources such as fish meal or meat meal.

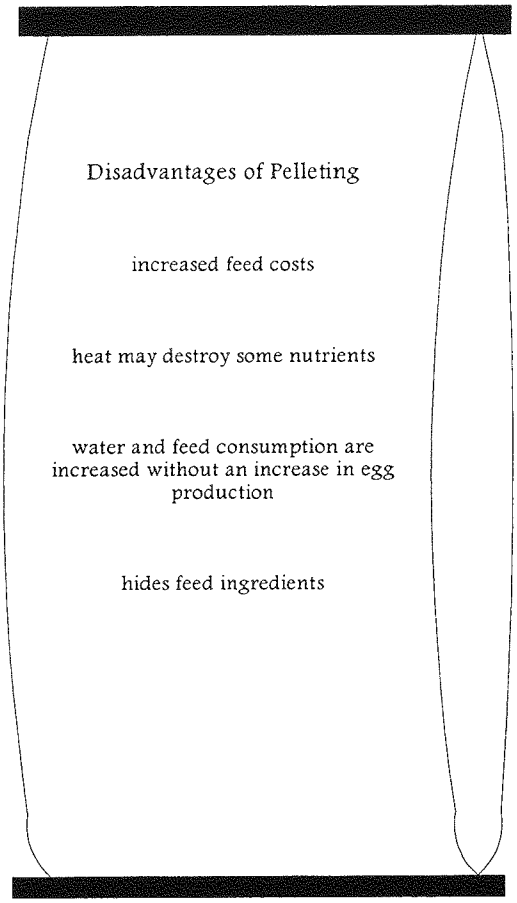
Vitamins and minerals are added to the ration as required by the specific type of poultry.

You may also find grit of varying size added to feed to help the bird grind the feed in the gizzard. Your leader has an experiment to show you how the gizzard works.

PROCESSING

Processing of the poultry feed includes grinding the cereal grains and pelleting all or parts of the diet. Pelleting or cubing followed by crumbling results in a physical increase in density and prevents the bird from sorting the ration ingredients. The crumbles are generally fed to very young birds and then the feed is left in the pellet form for older birds. A mash is feed before it has been pelleted.

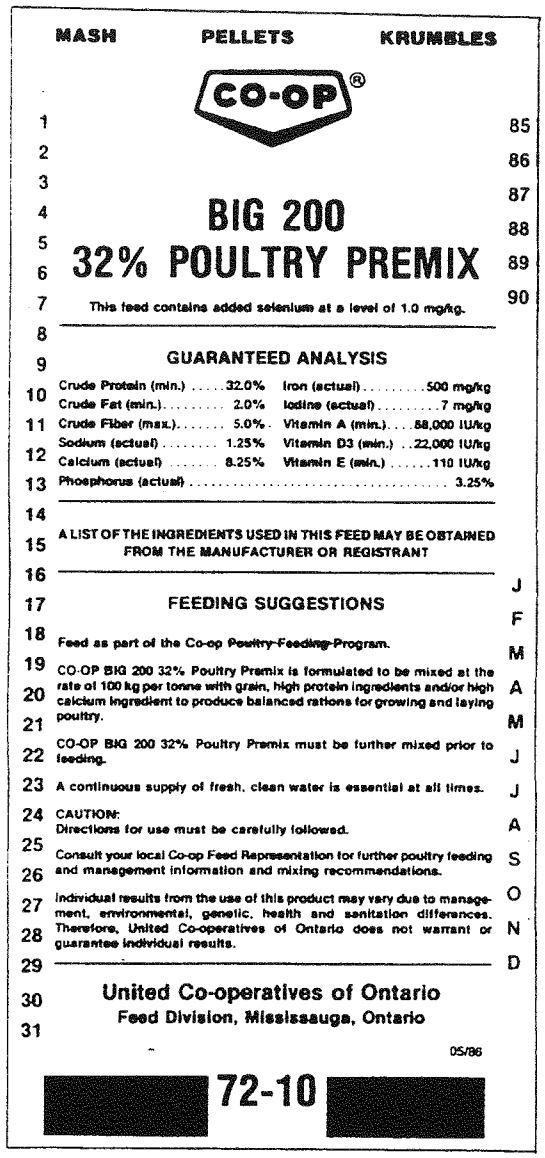




THE FEED TAG

Here are two examples of supplement tags from a feed company. (Tags should not be considered as a preference for one particular feed or manufacturer.)

SUPPLEMENT A



MASH PELLETS KRUMBLES

CO-OP®

BIG 200

32% POULTRY PREMIX

This feed contains added selenium at a level of 1.0 mg/kg.

GUARANTEED ANALYSIS

Crude Protein (min.)	32.0%	Iron (actual)	500 mg/kg
Crude Fat (min.)	2.0%	Iodine (actual)	7 mg/kg
Crude Fiber (max.)	5.0%	Vitamin A (min.)	88,000 IU/kg
Sodium (actual)	1.25%	Vitamin D3 (min.)	22,000 IU/kg
Calcium (actual)	8.25%	Vitamin E (min.)	110 IU/kg
Phosphorus (actual)			3.25%

A LIST OF THE INGREDIENTS USED IN THIS FEED MAY BE OBTAINED FROM THE MANUFACTURER OR REGISTRANT

FEEDING SUGGESTIONS

Feed as part of the Co-op Poultry Feeding Program.

CO-OP BIG 200 32% Poultry Premix is formulated to be mixed at the rate of 100 kg per tonne with grain, high protein ingredients and/or high calcium ingredient to produce balanced rations for growing and laying poultry.

CO-OP BIG 200 32% Poultry Premix must be further mixed prior to feeding.

A continuous supply of fresh, clean water is essential at all times.

CAUTION:
Directions for use must be carefully followed.

Consult your local Co-op Feed Representation for further poultry feeding and management information and mixing recommendations.

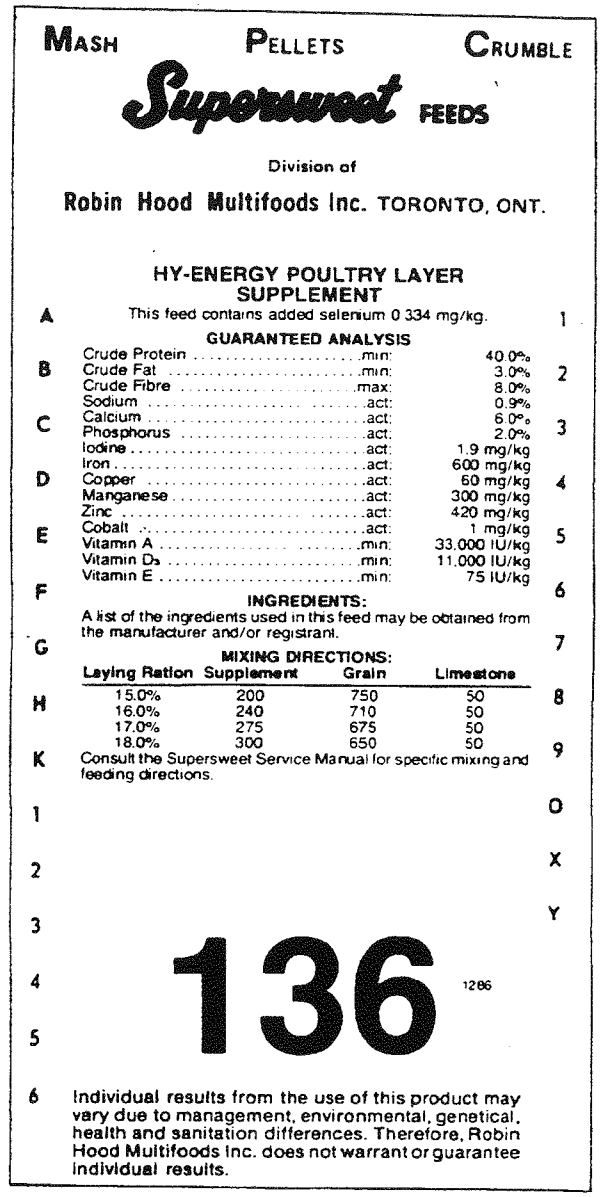
Individual results from the use of this product may vary due to management, environmental, genetic, health and sanitation differences. Therefore, United Co-operatives of Ontario does not warrant or guarantee individual results.

United Co-operatives of Ontario
Feed Division, Mississauga, Ontario

05/86

[redacted] 72-10 [redacted]

SUPPLEMENT B



MASH PELLETS CRUMBLE

Supersweet FEEDS

Division of

Robin Hood Multifoods Inc. TORONTO, ONT.

HY-ENERGY POULTRY LAYER SUPPLEMENT

This feed contains added selenium 0.334 mg/kg.

GUARANTEED ANALYSIS

Crude Protein	min:	40.0%
Crude Fat	min:	3.0%
Crude Fibre	max:	8.0%
Sodium	act:	0.9%
Calcium	act:	6.0%
Phosphorus	act:	2.0%
Iodine	act:	1.9 mg/kg
Iron	act:	600 mg/kg
Copper	act:	60 mg/kg
Manganese	act:	300 mg/kg
Zinc	act:	420 mg/kg
Cobalt	act:	1 mg/kg
Vitamin A	min:	33,000 IU/kg
Vitamin D_3	min:	11,000 IU/kg
Vitamin E	min:	75 IU/kg

INGREDIENTS:
A list of the ingredients used in this feed may be obtained from the manufacturer and/or registrant.

MIXING DIRECTIONS:

Laying Ration	Supplement	Grain	Limestone
15.0%	200	750	50
16.0%	240	710	50
17.0%	275	675	50
18.0%	300	650	50

Consult the Supersweet Service Manual for specific mixing and feeding directions.

136 1286

Individual results from the use of this product may vary due to management, environmental, genetical, health and sanitation differences. Therefore, Robin Hood Multifoods Inc. does not warrant or guarantee individual results.

Compare the tags for Supplement A and Supplement B (on the previous page) to see what information is given and how different birds need different levels of nutrients. Ask yourself these questions.

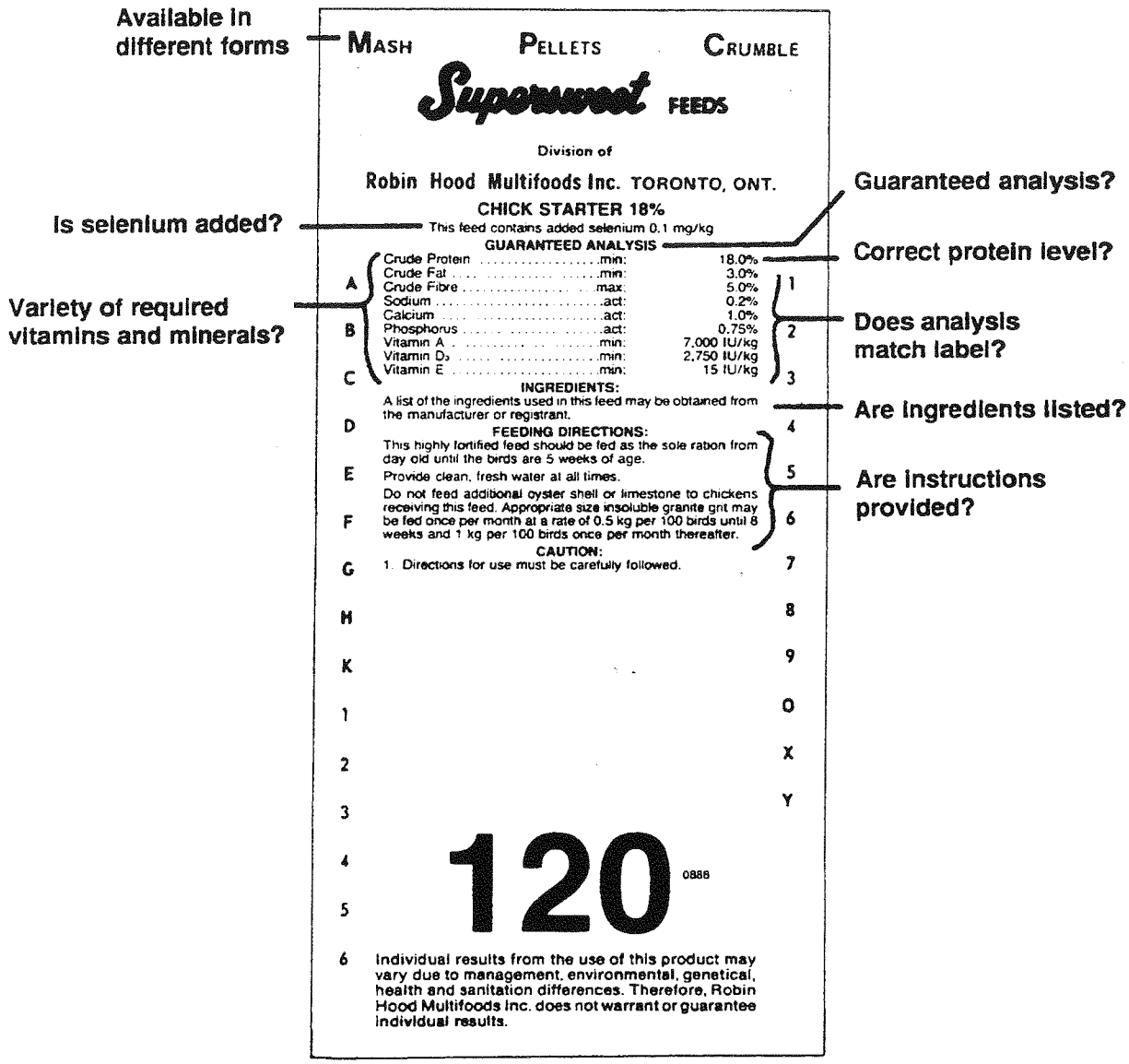
1. What type of poultry is this for?
2. What is the name of the supplement?
3. Are mixing directions given on the tag?
4. Is there selenium in the supplement?
5. Does the manufacturer guarantee these levels of nutrients?
6. What is the minimum calcium level?
7. What is the Vitamin E level?
8. Is a list of ingredients given?
9. If not, where can you get the list?
10. What grains does the manufacturer recommend you use with this supplement?

BEFORE THE NEXT MEETING

Bring as much of the following equipment as possible to the next meeting: 1.36 L juice cans, large plastic jugs, empty wooden thread spools or wooden blocks, finishing nails, large tin cans, S-hooks.

JUDGING TIPS (OPTIONAL)

If someone asked you to judge a class of feed tags for a chick starter ration, what would you look for?



Feed Me, I'm Yours!

ROLL CALL

Name one thing you have learned in this 4-H club about poultry that you didn't know before.

****

FEEDING THE MEAT-TYPE BIRD

The main purpose of raising meat-type birds is to produce a healthy well-fleshed bird as efficiently as possible. The more weight the bird gains on as little feed as possible, the more money the farmer will make. The most common method of measuring the efficiency of meat-type bird production is feed conversion or feed efficiency. In other words, calculate the amount of feed eaten per kilogram of weight gained. For example, a 1.60 feed efficiency means that for every 1 kilogram (kg) of body weight gain, the bird ate 1.60 kg of feed.

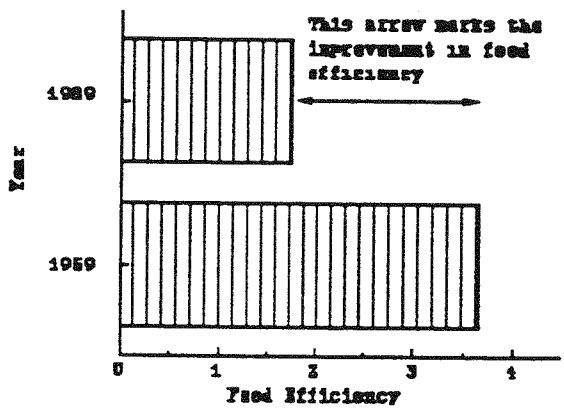
The poultry industry has made tremendous progress. Thirty years ago it took 15 weeks and 7.3 kg of feed to produce a 2.0 kg broiler.

$$\text{Its feed efficiency} = \frac{\text{kg of feed}}{\text{kg of gain}} = \frac{7.3}{2} = 3.65$$

Today it takes only 6 weeks and 3.5 to 4.0 kg of feed to produce a 2.0 kg broiler.

$$\text{Its feed efficiency} = \frac{\text{kg of gain}}{\text{kg of gain}} = \frac{3.5}{2} = 1.75$$

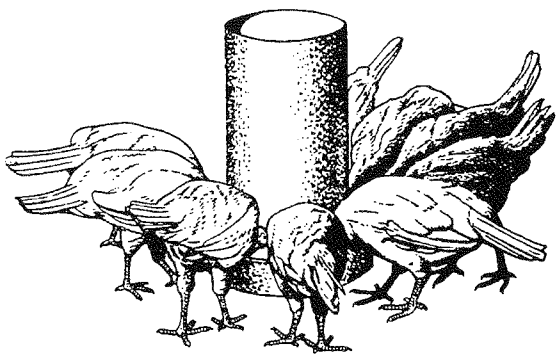
Here is a chart of the improved feed efficiency on this graph.



CHICKEN BROILERS

If you have a younger brother or sister, you may remember when they made the giant step from baby food to adult food. Think of broilers the same way - most farms follow a two phase feeding system by feeding broilers a starter diet from day-old to 3 weeks of age, followed by a finisher diet until market age (approximately 6 weeks of age). Usually, the feed is crumbled during the starter period and in pellet form in the finishing period. A young chick needs a higher level of protein because it is growing so fast during the first few weeks. It is mostly putting on muscle then and muscle is made up mostly of protein. Usually a starter diet of about 24% protein is fed followed by a finisher diet of 20% protein.

TURKEYS



Turkeys are Ontario's other popular meat-type bird. They are fed higher levels of protein than broilers due to their much faster growth rate and muscle yield.

Suggested guidelines for raising turkey broilers are:

Age	Protein Diet
0-4 weeks	28%
4-8 weeks	25%
8-10 weeks	21%
10-12 weeks	18%
12-20 weeks	16%

FEEDING THE LAYING HEN

Just like the broiler chicken, the laying hen's feed efficiency has also improved. Thirty years ago it took 2.7 to 3.2 kg of feed to produce one dozen eggs whereas today it takes 1.5 to 1.7 kg of feed for one dozen eggs.

Many of today's pullets are maturing and coming into egg production at an earlier age than a few years ago. Two to three weeks before egg production begins, pullets should be put on a diet containing an increased level of protein and energy. Do you have any guesses why?

By putting the pullets on a high nutrient density diet at 17-19 weeks of age the pullets will come into production on a higher level of nutrition. In other words, as the hen comes into production she needs more nutrients per gram of feed. Her feed intake may be limited by her digestive tract capacity or by the energy level of the diet. The hen will eat to her energy level requirements. Therefore there must be high enough levels of protein, amino acids and calcium in the feed so that she is eating enough to support egg production of good sized eggs.

FANCY POULTRY

Many fancy poultry buffs may use special feeding programs. However the following feeding program will give good results.

If you are feeding chicks, use a good commercial chicken starter mash of about 18 to 20% protein in granular or crumbled form. Keep it in front of your birds at all times for the first six to eight weeks.

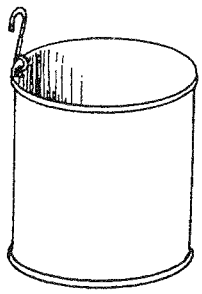
After your bantams are eight weeks of age you can use a starter mash plus some chick scratch. You can gradually increase the scratch until it represents about one-half of the total feed at 16 weeks of age. Growing mash can be substituted for the starter mash anytime after 10 weeks of age. A combination of about one-half hen scratch and one-half laying mash is satisfactory for males and adult hens not in egg production. When hens are laying they should have all the egg mash they want plus a small amount of grain.

When you expect to hatch eggs from your fancy poultry they should receive a breeder type mash in place of the regular egg mash. It is a good plan to start feeding this breeder mash about one month before you begin to save eggs for hatching. The breeder type mash provides additional amounts of vitamins and nutrients that tend to promote strong healthy chicks.

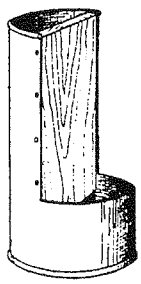
Avoid frequent drastic changes in the diet of bantams. This may cause hens to stop laying and begin moulting or losing feathers.

BUILDING, FEEDING AND WATERING EQUIPMENT

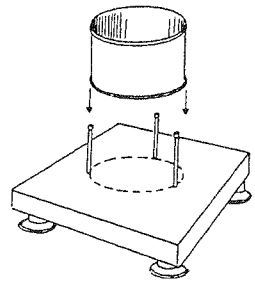
Feeding poultry does not require expensive equipment. Here are some examples of inexpensive feeding and watering equipment you can build yourself if you have just a few birds.



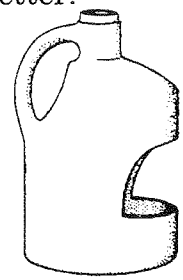
The large sizes of empty fruit juice cans make good feed and water containers when fitted with simple wire hooks. Attach them to partitions or walls.



1.36 L fruit juice cans can be made into simple "self" feeders.



A square piece of heavy board with three equally spaced finishing nails makes a good base for feed or water containers. Spools or blocks to form short legs and allow air circulation beneath make it still better.



Good feeders and waterers can be made from empty plastic jugs.

PROJECT REVIEW

Now that you're just past the halfway point of this project, it's a good time for a project review. So step up to the plate and get ready to play. (Beware there might be a few sneak questions from next meeting just to see how good you really are!)

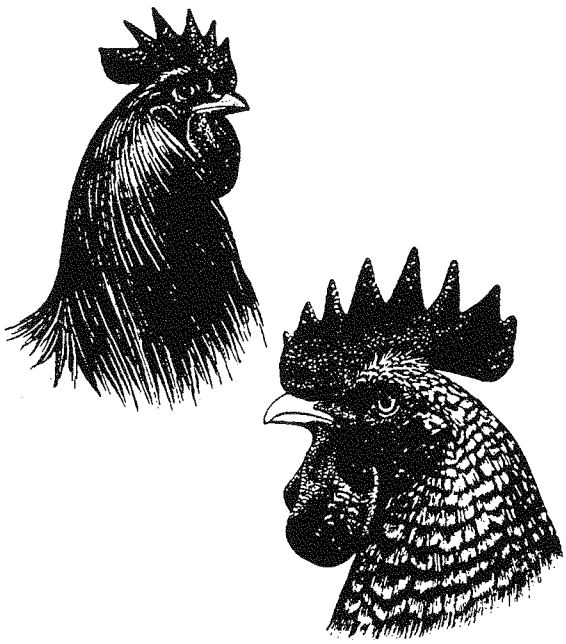
BEFORE THE NEXT MEETING

1. Check with your leader if you have any questions about your project.

2. Prepare the roll call for the next meeting.

JUDGING TIPS (OPTIONAL)

Official judges of fancy poultry receive lots of training before they are qualified to judge at breed shows ... so don't expect to be an overnight expert! But there are some things that you should be aware of in judging poultry.



1. The most important things to consider are shape and type. Does the bird look like its breed?

2. Examine the head closely. It indicates the state of health and vitality. The head should be strong, moderately long, and well filled in forward of the eyes to avoid any appearance of crowheadedness, with the skull inclined to be somewhat flat on top, rather than round. The face should be clean cut, smooth and free of wrinkles, the skin fine grain and soft in texture, the comb of good substance and size and bright red in colour. The over-refined, thin type of comb is not only liable to buckle or show thumb marks, but also indicates lack of vigour. The eye should be large, bright and prominent, the iris rich in colour, the pupil distinctly and perfectly formed.

3. Look at the bird's back. The bird should carry the desired width not only from the shoulders to the hips, but also as near as possible to the base of the tail.

4. The body capacity is also important. A large abdomen or large internal capacity is necessary for adequate intestinal development, which is essential for rapid digestion and use of food necessary to heavy egg production. You can determine this dimension by placing your thumb on the hip bone and spanning with your hand and fingers the sides of the body to the keel bone in front and in back of the legs.

   Heart-girth is measured by determining the width of the back and the depth of the body immediately behind the junction of the wings and body. This part of the body needs to be adequate for proper development of the lungs and functioning of the heart.

5. Take a step back and look at the bird's condition. Does it appear vigorous and healthy? Are there signs of disease? Is it deformed in any way?

6. Proper surface colour gives breed identity, lends beauty and provides uniformity of appearance. Is the bird true to the colour of its breed?

7. Feathers act as a protective covering for birds, protecting them from cold, rain, sun and injury, also aiding in short flight. It is important that the feather be relatively broad; the web of good firm texture, with a strong shaft; the barbs, barbules and barbicels closely and tightly knitted together.

There are other facts to consider in judging fancy poultry such as weight, but these are the bare essentials. The other thing to remember with fancy poultry is that what is desired in one breed may not be desired in another. In Bantams, for example, the feathers should be short, rather narrow, hard and firm, with as little fluff as possible, fitting very close to the body. In Cochins, the feathers should be broad, long, soft, and fitting loosely on the body with fluff long and abundant. You need to know the characteristics of the breed you're judging!

Refer to the 4-H Judging Handbook (4-H-1550-91) for a scorecard to judge fancy poultry.

A Bird in the Barn is Worth Two in the Sickpen

ROLL CALL

How do you know if birds are healthy?

****

A healthy bird is eating, drinking, and moving around. How would you recognize a sick bird? You could ask it, but in case your birds don't talk, look for these tell-tale signs: a drop in water or feed consumption, droopy feathers, laying hens that quit laying, birds that don't move around, ...

PREVENTING DISEASE

If you were a poultry producer back in the 1950's or 1960's, raising healthy birds could have been harder than today. Since that time, many poultry diseases are under control because of vaccinations, medicated feed and better disease prevention. Examples include Marek's disease and coccidiosis.

As they say in football, the best defence is a good offence. The same logic applies to keeping a poultry flock healthy. Here are some guidelines to follow in preventing disease.

1. Select healthy, vigorous, disease-free chicks, poults or pullets.

2. Keep birds of different ages well isolated from each other. Separate caretakers and equipment and this will increase chances of success in isolation. Maintain breeder flocks on separate premises.

3. Isolate poultry from other livestock. Chickens, cattle, turkeys and swine are subject to infections from each other.

4. Provide adequate commercial feed or carefully formulated home mixed feeds.

5. Provide a continuous supply of clean fresh water for birds of all ages. In the summer keep the water cool by protecting it from the sun. Protect it from freezing in the winter. Birds consume two times as much water as feed. When water intake decreases, there is a decrease in feed intake, too. A marked reduction in feed and water consumption is often the first sign of illness.

6. Don't crowd poultry. Crowding increases cannibalism, feather picking, hysteria and other stress-related problems. Crowding retards growth, reduces feed efficiency and decreases production.

7. During brooding regulate temperature, humidity and ventilation to the comfort of the chicks and poults. Prevent drafts, overheating and chilling.

8. Keep unauthorized people out of the poultry house.

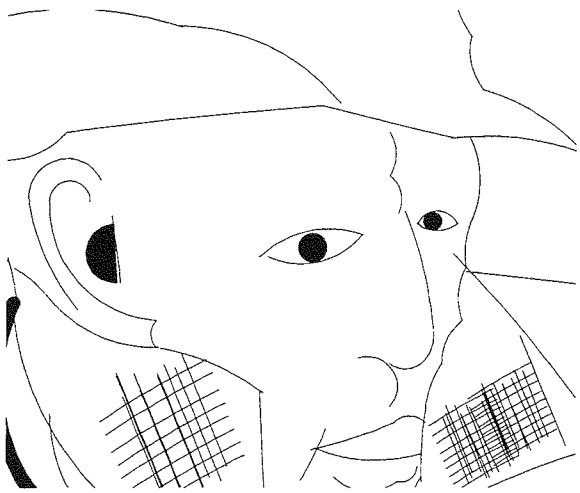
9. Composting, proper incineration, disposal pit and deep burying, in that order, are the best methods. Dead birds, if not properly disposed of, become a disease threat to all poultry in the area.

10. Change litter and thoroughly clean and disinfect barn and equipment after each group of birds.

11. In disease outbreaks promptly obtain a reliable diagnosis. Then use the best treatment for control of that particular disease.

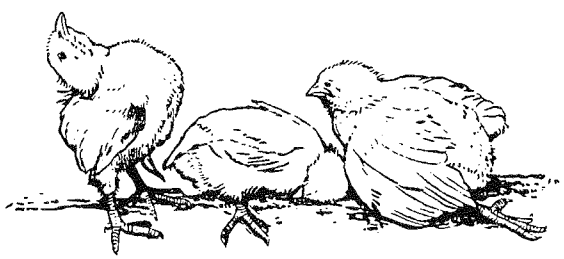
Although the health record of the poultry industry is inspiring, diseases still cause large economic losses to the industry estimated in the millions of dollars. Prevention is important!

SUPER SLEUTH



Some people might say you can raise poultry with your eyes closed. But if you have your eyes closed, you may miss some vital clues to your flock's health and comfort.

Symptom	What's Wrong	Remedy
1. Strong ammonia odours.	Poor air movement, or too crowded or barn too wet.	• Provide good ventilation. Check for leaking waterers. Add dry bedding. Have fewer birds per square foot.
2. Fecal material sticking to the bird's cloaca.	Hard to predict, may be due to intestinal infection.	• Get a professional diagnosis and base remedy on it.
3. Birds are gasping or snicking (sneezing) with some increase in mortality.	Respiratory disease.	• Post mortem necessary to determine cause, may involve antibiotic use or vaccination.
4. Huddling and piling in small groups or in corners.	Too cold or too drafty.	• Raise temperature or eliminate draft conditions.
5. Birds are lame, reluctant to walk.	Could be nutritional problem or foot/leg problems.	• Obtain a diagnosis.
6. Drop in egg production.	Hard to predict.	• Have a post-mortem done and a serology blood test.



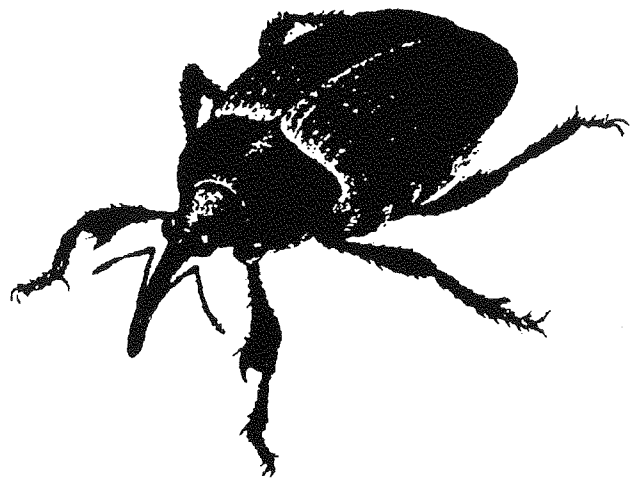
HEALTH PROBLEMS

Since this 4-H project covers nutrition and housing, we'll concentrate on health problems caused by those two factors.

Most diseases caused by nutrient deficiencies should not occur if premixes are added to feed in the proper amounts. Feeding your birds correctly will create healthier birds able to fight off infectious diseases.

Disease	Cause	Symptoms	Remedy
Flip-over disease (or sudden death syndrome)	Unknown; activity caused by bright light particularly sunlight, noise and other disturbances may increase the rate of flip-over.	Young, healthy, fast-growing broiler chickens die suddenly with a short wing-beating convulsion.	• Feeding a mash ration or restricting feed intake by 15 to 20% may reduce incidence (but will likely cost more in lost feed efficiency than it would save in death loss). • After the first 5-7 days when chicks know where feeders and waterers are then low lighting may reduce incidence.
Heat stress	Not enough air movement on a hot day; power out making fans stop completely.	Panting, stretched out neck, raised wings, decreased activity and death.	• Install adequate ventilation for hot weather. • Have lots of cool water available to drink. • Have lots of space for the birds. • Add a sprinkler system. • Have an alarm system and a stand-by generator for power outages.
Feather picking and cannibalism	Overheating, lack of or imbalance of feed supply, boredom.	Blood on feathers, birds picking at each other.	• Debeak birds at early age. • Maintain proper temperatures, avoid overcrowding, and feed a balanced ration.

Birds in pens with windows are sometimes more prone to cannibalism or feather picking. It usually starts on a sunny day when the sun's rays penetrate the pen and the birds see the dust particles that are in the air. The particles land on another bird's feathers and a bird trying to pick up the dust particle accidentally pulls a feather or draws blood.



Parasites use the bird as their "home" and live from its skin, blood, or food. External parasites (on the outside of the bird) such as lice and mites and internal parasites (inside the bird) such as roundworm are relatively common in backyard flocks in Ontario. Predators (either on two legs or four legs) can be a problem in birds out on range. And if not kept under control, mice and rats could be a problem in a barn. Here are some ways that you could change a flock's housing or nutrition to prevent problems from parasites, predators, or rodents:

- screen over windows and air inlets and outlets to prevent entry by wild birds and insects.
- make sure there are no holes along walls and around doorways and pipes to prevent entry by rodents.
- thorough cleaning of pens between flocks.
- disinfect equipment before using it in different barns or pens.
- make sure dead bird carcasses are removed daily to prevent healthy birds from picking at them.

BEFORE THE NEXT MEETING

1. Start preparing for your Achievement Program.

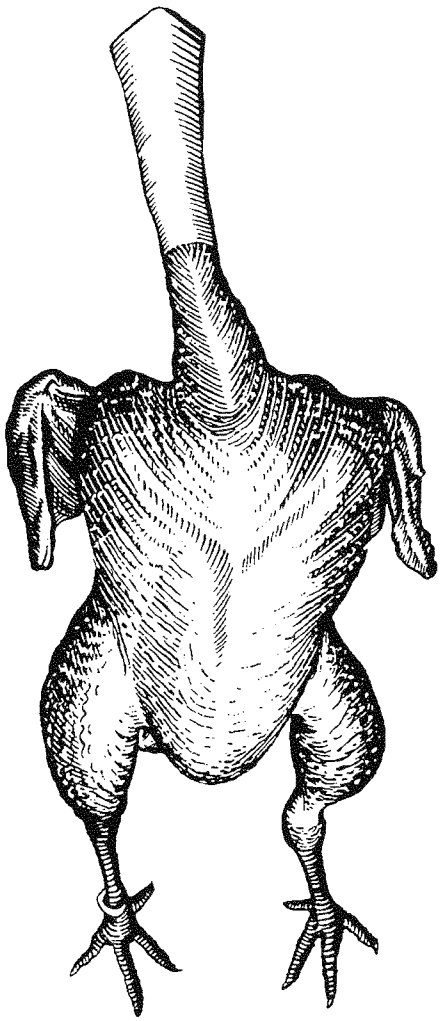
JUDGING TIPS (OPTIONAL)

DRESSED POULTRY

If you produce poultry for meat, then the most important thing to you is what it looks like when it is ready to be cooked. After all that is when a consumer will be judging whether to buy it or not. So put on your consumer hat when you judge dressed poultry, and look at these seven areas from the consumer's point of view. Refer to the 4-H Judging Handbook for more information.

1. **Conformation**: A bow-legged chicken might taste as good as any other but it doesn't look so great. More importantly, a bird's structure can determine the distribution and amount of meat. Some of the defects that should be noted are breasts that are dented, crooked, knobby, V-shaped or slabsided, backs that are narrow, crooked or hunched; legs and wings that are deformed; and bodies that are definitely wedge-shaped.

2. **Fleshing**: The drumsticks, thighs, and breast carry the bulk of the meat. There is, however, a definite correlation between the covering of the flesh over the back and the amount of flesh on the rest of the carcass. The common defects in fleshing are breasts that are V-shaped or concave, rather than full and rounded; breasts that are full near the wishbone but taper sharply to the rear; legs and drumsticks which are thin; and backs that have insufficient flesh to cover the vertebrae and hip bones.



3. **Fat**: Fat in poultry is judged entirely on the basis of accumulation under the skin. Poorly fatted birds may have some accumulation of fat in the skin along the heavy feather tracts on the breast. As the bird progresses in "finish", accumulations will be noted at the juncture of the wishbone and keel and where the thigh skin joins the breast skin. At the same time, accumulations will be noted around the feather follicles between the heavy feather tracts and over the back and hips. Well finished older birds will have sufficient fat in these areas and over the drumsticks and thighs so that the flesh is difficult to see. Well finished young birds will have less fat under the skin between the heavy feather tracts on the breast and over the drumsticks and thighs than mature birds.

4. **Freedom from Pinfeathers**: There are two types of pinfeathers to be considered in grading. They are protruding and non-protruding. Protruding pinfeathers are those which have broken through the skin and may or may not have formed a brush. Non-protruding pinfeathers are those which are in evidence but which have not pushed their way through the outer layer of skin. A carcass may be considered as being free from protruding pinfeathers if it has a generally clean appearance (especially breast), and if not more than an occasional protruding pinfeather is in evidence during a more careful examination of the carcass.

5. **Freedom from Exposed Flesh Resulting from Cuts, Tears, and Broken Bones**: Exposed flesh resulting from cuts, tears, missing skin, and broken or disjointed bones detract from the appearance of the bird and, in addition, lower the quality because of bruises and blood clots which occur frequently with broken bones. Tears and missing skin permit the flesh to dry out during the cooking process, thus lowering the eating quality of the bird. The number and extent of such defects permitted depend on their location, whether on the breast or elsewhere on the carcass.

6. **Freedom from Discolouration of Skin and From Flesh Blemishes and Bruises**: Discoloured skin as a result of damaged skin that has been exposed to air is undesirable. Bruises in the flesh or skin are permitted only to the extent that there is no coagulation or clotting (noticeable clumps of red cells).

7. **Freedom from Freezing Defects**: The discolouration and drying out of the skin of poultry carcasses during storage is commonly called "freezer burn". This defect detracts from the appearance and sales value of the carcass and also lowers the quality, either in the case of moderate or severe freezer burn.

GLOSSARY

A glossary helps you understand words you haven't heard before. Here is the start of one. There's room at the end for you to add more.

Abdomen- area between the keel and pubic bones.

Barring- alternate strips of light and dark across a feather.

Beak- upper and lower parts of the mouth of chickens, turkeys, etc.

Beard growth of wiry hairs on the front portion of the breast of a male turkey.

Bill- upper and lower parts of the mouth of waterfowl.

Breast- the forward part of the body between the neck and the keel bone.

Breed- a group of fowl related by ancestry and breeding true to certain characteristics such as body shape and size.

Broiler- usually a young chicken 6 to 7 weeks of age or sometimes a young turkey 12 to 13 weeks old processed for meat.

Brood- to raise young poultry by keep them warm.

Broody- maternal instinct causing the female to want to hatch eggs.

Capon- a castrated male chicken grown for meat. They produce meat of superior quality.

Class- the specified geographic area from which certain breeds of chickens originated. Example - the White Leghorn belongs to the Mediterranean Class.

Cockerel- a male chicken less than 12 months of age.

Comb- the fleshy part on top of the head of chickens, usually reddish in colour.

Down- the soft, fine, fluffy covering of young birds. Down feathers may also be present on adult birds, such as breast of geese.

Drake- male duck.

Duck- female duck as distinguished from the drake.

Duckling- young duck of either sex.

Ear- the small opening on each side of the head.

Finish- relates to the meat quality of a dressed or eviscerated bird. Dressed is a slaughtered bird with feathers removed. Eviscerated is a slaughtered bird with feathers, head, feet and viscera or inners removed.

Fleshing- relates to the meatiness of the bird, such as ratio of meat to bone.

Gander- male goose.

Goose- female goose as distinguished from the gander.

Gosling- young goose of either sex.

Hackle- plumage on side and rear of the neck.

Hen- a female more than 12 months old.

Hock- the joint of the leg between the lower thigh and the shank.

Keel- breast bone.

Moult- to shed old feathers and grow new ones.

Oil Sac- large oil gland on the base of the tail used to preen or condition the feathers.

Poult- a young turkey.

Primaries- the long stiff flight feathers on the outermost half of the wing.

Pubic-Bones the thin posterior portion of the hip bones that form part of the pelvis

Pullet- female chicken less than one year old.

Roaster- chickens of either sex 3 to 5 months of age grown for large meat bird.

Saddle- the upper back portion of the bird, just before the tail section.

Secondaries- the large wing feathers adjacent to the body.

Shank- the leg portion from the toes to the hocks.

Sickles- the long curved tail feathers of the male chicken.

Snicking- a chicken sneeze!

Spur- the stiff horny growth on the inside of the shank of older poultry, more pronounced in males.

Thighs- the feathered parts of the legs between the hock and the juncture with the body.

Tom- male turkey.

Variety- subdivision of a breed distinguished either by plumage colour, plumage pattern or comb type.

Vent (or-Cloaca) excretory or fecal opening at the tail area of birds.

Wattles- the thin fleshy skin at either side of the base of the beak and upper throat.

Web Foot- thin rubbery layer of skin between the toes of waterfowl.

PROJECT INFORMATION SHEET

(To Be Handed In)

MEMBER

Name _____ Age _____

Club _____

Address _____

County/District/Reg. Mun. _____ Postal Code _____

Lot _____ Concession _____ Township _____

Telephone No. _____ Parent's/ Guardian's Name _____

PROJECT BIRDS

Date when 4-H member began caring for the bird(s) _____

Number of birds in member's care _____

Age of bird(s) at beginning of project _____

What kind of poultry are you caring for? (Breed and purpose) _____

_____

Address where birds are housed _____

Name of owner _____

Where inter-county livestock competitions require the 4-H project animal must be shown, only members who have submitted their project information (PIS) (one animal per commodity) to the designated Provincial Coordinator no later than June 1st (date stamped on arrival) will be eligible to have a leader or Provincial Coordinator endorse their entry as required.