SKILLATHON: An event held to challenge the exhibitor’s knowledge of all aspects of the animal species.

STATION TOPICS: Participants will rotate through four stations with rabbit care skills, each with a facilitator to prompt discussion, ask questions and facilitate the learning experience. Stations will include: Breed Identification & Traits, Anatomy, Diseases, and Parliamentary Procedure. Participants will have approximately five minutes at each station.

AWARDS: Rosettes and medals will be given to class Junior and Senior class winners. All participants will receive a pin and a participation ribbon.

The following are study materials for this year’s rabbit skillathon. Study materials are products of The Ohio State University Rabbit Learning Laboratory Kit and Rabbit Resource Handbook.

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Section 3. Breed Identification

Juniors/Cloverbuds: Identify breeds
Seniors: Breed traits

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Cloverbuds: 4-H Pledge and the four “Hs”
Juniors/Seniors: Parliamentary procedure
Section 1. Anatomy

Cloverbuds: Body parts and body types
Juniors/Seniors: Rabbit skeletal system, body parts, and body types
Use this poster in conjunction with Anatomy - Match the names to the correct parts of the rabbit situation/task statement and/or Parts of a Rabbit identification tags.
**Anatomy**

It is important to learn the external parts of a rabbit to be able to discuss with someone why you chose a certain rabbit or to understand where a certain part is when someone is talking with you about a rabbit. Refer to the illustration below to learn the external parts of a rabbit.

It is also important to learn the skeletal anatomy of a rabbit to understand where the bones are in relation to the external anatomy. You also should know the skeletal structure to be knowledgeable about what bones you are feeling when examining a rabbit. Knowing the skeletal anatomy can help you select better rabbits. The names and locations of the bones are important to know when processing meat rabbits. Refer to the illustration on the next page to learn the rabbit’s skeletal structure.
Conformation

The body shape and weight make up the rabbit’s conformation. The American Rabbit Breeders Association recognizes the following five body types: 1) semi-arch, 2) compact, 3) full arch, 4) commercial, and 5) cylindrical.

The semi-arch body type carries a very good arch starting at the back of the shoulders and through to the base of the tail. This is referred to as having mandolin type. The compact type has a lighter ideal weight and is shorter bodied than the commercial type, but possesses many of the same characteristics. The full arch type has an arch starting at the nape of the neck and running the entire length of the rabbit to the junction of the tail. These full arch breeds come in all sizes, and all have more depth than width. They are longer in body than other body types of rabbits of similar size. The commercial type is considered ideal in meat type. It is medium in length with a balance in depth and width. It has a round body and firm flesh. The cylindrical type has a long, narrow, and tubular body with a fine bone. Examples of the five body types are pictured on the next page. Refer to the breed descriptions to learn which breed falls under each body type.
Fur Types

There are four types of fur found in the recognized breeds of rabbits.

1. The Angora or Wool type of fur is a very long, thick hair found originally on the four Angora breeds. It also has been bred into some newer breeds of rabbits.

2. The Rex type of fur is a short, dense coat that feels very soft to the touch.

3. The Satin fur type is a very shiny coat of hair that is said to have sheen. Each hair shaft is hollow, causing an iridescent effect. This coat of fur was originally found only on the Satin breed of rabbit, but has now been bred into some newer breeds.

4. The Normal fur is the most common fur found on rabbit breeds. It exists as rollback, flyback, or standing as called for in the breed standards. A rollback coat returns gently to its original position when the fur is stroked from tail to head. The flyback fur snaps back quickly into its original position when stroked forward. The standing fur simply stands erect and has no return as it is stroked.

Refer to the breed descriptions to learn the fur type of each breed.

Disqualifications

Disqualifications are undesirable qualities in a rabbit, such as illnesses or physical defects, which can cause them to not be considered for placing in a show. A rabbit with a permanent disqualification should not be used for breeding since these conditions are often hereditary. Culling such animals from your herd will result in greater overall quality and lower frequency of the appearance of these conditions.

It is important to know that not all disqualifications are permanent. Some examples of possible temporary disqualifications include overweight or underweight rabbits, certain ailments, missing toenails, and illegible tattoos. Carrying cage mishaps on the way to shows may cause missing toenails; however, they should grow back and the rabbit is fine to show. Also, there are specific breed disqualifications that are listed in the ARBA Standard of Perfection. Research your specific breed to learn about these disqualifications. Refer to the chart on the next page for a listing of ARBA disqualifications from competition that applies to all breeds.
Section 2. Diseases

Juniors/Seniors: Tails and Ears (no Cloverbud section)
Use these copy cards in conjunction with Care - Match symptom with name situation/task statement and/or Ailments and Disorders identification and description tags.

**Sore Hocks**
(Ulcerative Pododermatitis)

**Ear Canker**
(Acariasis)

**Wry Neck**
(Torticollis)

**Weepy Eye**
(Staphylococcosis)

Ailments and Disorders
Exploratory Learning: Education Program
Product distribution through the Curriculum Materials Service
Use these copy cards in conjunction with Care - Match symptom with name situation/task statement and/or Ailments and Disorders identification and description tags.

**Snuffles**
(Infectious Respiratory Disease)

**Mange**
(Sarcoptic Mange or Acarasis)

**Vent Disease**
(Venereal Spirochetosis or Treponematosia)

**Wound**
(Lacerations and/or Abrasions)

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Ailments and Disorders
Exploratory Learning: Education Program
Product distribution through the Curriculum Materials Service
Use these cards in conjunction with Care - Match symptom with name situation/task statement and/or Ailments and Disorders identification and description tags.
Abscesses

Abscesses can begin as a cut or other abrasion on the rabbit’s body that allows the entrance of infectious bacteria. This bacterium is *Pasteurella multocida*, which is very common in rabbitries. In addition to entering through abrasions, this agent can grow in the oral and nasal cavities, and spread via the bloodstream to various parts of the body and produce abscesses. A pus-filled sack or lump may form under the rabbit’s skin as a result of this infection. When one of these abscesses is found, the rabbit should be separated from the others before lancing the abscess. As the contents of the abscess may contain infectious bacteria, the abscess should be drained and allowed to heal before returning the affected animal to the rabbitry. Apply an antibiotic ointment to the abscessed area. Consult your veterinarian about other antibiotic therapy. As infected rabbits can rarely be completely cleared of the infection, culling should be considered to reduce the risk of exposure to other rabbits in your rabbitry.

Coccidiosis

Coccidiosis is one of the most common diseases of rabbits and primarily manifests itself as an intestinal disorder resulting in diarrhea. It is caused by protozoan parasites that are present in the rabbit’s intestines. Generally, coccidiosis can be controlled by a combination of sanitation and medications available from your veterinarian. Some species of these intestinal protozoa will attack the bile duct of the liver, causing a more serious condition than diarrhea. Coccidiosis of the liver can also be treated with sulfad drugs administered through the water or feed, but often the cause of the rabbit’s illness is discovered too late for treatment to be of much help. The principal signs of coccidiosis of the liver are severe weight loss and death. Yellowish-white spots in the liver can be seen on postmortem examination.

Good sanitation, especially of the feed and water bowls, is necessary to control coccidiosis. The best way to keep coccidiosis, particularly coccidiosis of the liver, from becoming a problem in your herd is to make sure that all manure and fecal material is removed from your rabbits’ cages frequently. Most rabbits become infected with coccidiosis of the liver through contact with fecal material that contains the eggs of the parasitic protozoa. Since these protozoa are very common in rabbitries, it is possible for a rabbit to become infected through contact with its own manure that has been present in its hutch for a few days.

Ear Canker

Ear mites are small parasites (*Psoroptes cuniculi*) that invade a rabbit’s ears causing ear canker. Rabbits with ear canker may shake their heads violently or dig at their ears with their back feet. There will also be a brown discharge in the ear. Ear canker can easily spread from one animal to another. If ear canker is found in one rabbit, immediately check all of the rabbits for symptoms of infestation. Since an untreated case of ear canker can contribute to poor overall health, and incessant scratching can lead to infections, it is very important that all infected rabbits be quarantined and promptly treated. Chemical miticide eardrops can be obtained from your veterinarian and are very effective. A few drops of light mineral oil used as eardrops can also be an effective treatment. Mineral oil should be applied with a cotton swab.
Enterotoxemia

Enterotoxemia is a dangerous killer, especially common among four- to eight-week-old fryers. The first symptom is usually extreme diarrhea that will soon result in dehydration. Afflicted rabbits may also go off of feed and have a poor appearance. Rabbits infected with this disease will die very quickly, sometimes within one day.

Enterotoxemia occurs when certain intestinal bacteria grow and produce a toxin. To prevent enterotoxemia, follow strict sanitation practices since this disease might be contagious. Pay close attention to the diet you are feeding the rabbits. Abrupt changes in the diet—either in quantity or formulation—should be avoided. A diet that is very high in energy and low in fiber may contribute to this condition by creating an environment in the rabbit’s digestive system that is favorable for enterotoxemia-causing bacteria to grow and produce their lethal toxins. Treatment is often unsuccessful, so prevention is the key. Roughage in the diet in the form of hay and straw can be used to minimize the risk of enterotoxemia.

Malocclusion

The teeth of rabbits continue to grow throughout life. Malocclusion is a disorder, not a disease. Rabbits with malocclusion display overgrown incisors (front teeth). This condition can be hereditary or the result of an injury. Since there is usually a genetic component to malocclusion, rabbits with this disorder should not be used as breeding stock. Pet rabbits with malocclusion should have their teeth clipped regularly by a veterinarian. If not clipped, the teeth will get so long that eventually they will prevent the animal from eating, which will cause it to starve to death. Other names for malocclusion include simple malocclusion, buck teeth, and wolf teeth. Simple malocclusion is a butting of the teeth. Normal teeth should show the upper incisors overlapping the bottom incisors.

Mange

Cheyletiella parasitivorax and Listrophorus gibbus are the two most common types of mites found in rabbits. These microscopic external parasites live in the fur of many rabbits, usually not causing much trouble. However, if the population becomes too large, dermatitis results. You may notice mange by the patches of fur loss, especially on the back of the neck. The fur may also look unthrifty. The rabbit may also scratch at the infected area. Cat flea powder is an effective treatment for mange.

Mastitis

Mastitis is an infection of the mammary system that affects lactating does. One of the first symptoms is that the doe will stop eating. Whenever a lactating doe goes off feed, thoroughly examine the animal for signs of illness. Upon examination, a doe with mastitis will have swollen mammary glands and an elevated temperature. The mammary glands may be red or they may take on a bluish color. Infected animals should be treated with antibiotics immediately. Allowing this condition to go untreated will result in the death of the litter and eventually the doe. Since mastitis is caused by such a highly contagious bacteria, Staphylococcus aureus, it is important to follow good sanitation practices to keep it from spreading throughout the herd. Sanitizing the nesting
boxes before and after use can minimize the risk of mastitis.

**Myxomatosis**

Myxomatosis, or *big head disease*, is a viral disease of rabbits caused by a *Myxoma virus* and most often transmitted by mosquitoes and fleas. This disease has been observed in rabbits in the Pacific Northwest down to California, in locations where the wild brush rabbit lives. The brush rabbit carries the virus, which is deadly when transmitted by mosquitoes to domestic rabbits. In the acute form, the earliest signs of this disease are inflamed eyes and Milky tears. These may not be noticed before the rabbit suddenly dies. The face, lips, cyclids, and sometimes ears will swell to gigantic proportions in the chronic form of Myxomatosis. Other signs may include swelling of the vent area in does and the scrotum and prepuce in bucks. No approved treatment exists in the United States.

**Pinworms**

Pinworms are common internal parasites of rabbits found in the cecum. These small, white worms, about 1/2 inch long, shed eggs that are passed with the fecal pellets. Sometimes you can see the actual worm on fresh fecal pellets. When the eggs become dry, they can become airborne and contaminate feed and water. Pinworms are transmitted when rabbits eat or drink the contaminated feed or water. Normally, they do very little damage, however a heavy pinworm infestation can harm a debilitated rabbit. Consult your veterinarian for treatment if pinworms become a problem.

**Pneumonia**

Pneumonia is an advanced respiratory infection that almost always results in the death of the infected rabbit. Usually caused by the bacterium *Pasteurella multocida*, pneumonia is often the result of an advanced, untreated case of snuffles. When a rabbit has pneumonia the tissues of its lungs become inflamed from the bacterial infection. This results in a decrease in lung capacity, and subsequently less oxygen is available to be absorbed by the blood. As pneumonia progresses, the rabbit suffers from the lack of oxygen. Symptoms of this disease include: 1) difficulty breathing, 2) bluish lips, 3) poor hair coat, 4) low rate of weight gain, 5) a generally poor overall appearance, and 6) sudden death. Treatment may include sulfa drugs or antibiotics, but is rarely effective because of the damaged state of the rabbit’s lungs and other organ systems.

Prevention is the best treatment for pneumonia. To prevent pneumonia, pay close attention to ventilation and sanitation, since a build-up of ammonia can contribute to the disease. Continuously monitor the animals for any signs of respiratory distress, and act immediately if a problem arises.

**Ringworm**

Ringworm (Dermatophytosis) is a highly contagious fungal infection caused mainly by two genera of fungi: *Microsporum* and *Trichophyton*. It is easily transmitted by direct contact with spores on the rabbit’s hair coat, bedding, and/or on soil. Ringworm is a zoonotic disease, meaning it is transmissible from animal to human, and vice versa. Therefore, use extreme caution when handling infected rabbits. Always wear disposable gloves and clothing that can be boiled or discarded. Signs of ringworm include superficial, crusty sores, usually first found on the rabbit’s feet or face. The hair is lost in a circular pattern over the sores, hence the name “ringworm.” Iodine is an effective treatment for individual rabbits. The drug griseofulvin is commonly used to treat ringworm in herd outbreaks. Consult your veterinarian for treatment.

**Snuffles**

The first symptoms of snuffles are a discharge from the nose and often sneezing. Rabbits may sneeze for many reasons, but if sneezing continues, investigate further for more signs of snuffles. Look for matting of the fur on the inside of the front paws. This indicates a regular discharge from the rabbit’s nose. The rabbit is attempting to wipe the discharge off by using its paws.

Two important things to remember about snuffles are: 1) it is extremely contagious, and 2) it is a permanent condition. Rabbits with snuffles should be immediately quarantined. Great care should be taken to not spread the disease to healthy animals through contaminated hands, clothing, or equipment. The symptoms of this disease can be treated with
Snuffles is the result of a bacterial infection with *Pasteurella multocida* being the usual agent. The bacterium *Pasteurella multocida* can be especially troublesome for rabbit owners since it is often the cause of other conditions such as weepy eye, pneumonia, and abscesses. If left untreated, snuffles will probably progress into a secondary infection such as pneumonia.

The best way to combat snuffles is to keep it out of the herd, but this is very difficult because an estimated 30 to 90 percent of the apparently healthy rabbits in conventional colonies are carriers. An effective snuffles prevention program includes: 1) buying new stock only from colonies that test and are known to be free of *Pasteurella multocida*, 2) following good sanitation practices, and 3) making sure the rabbitry is adequately ventilated. This reduces the ammonia level in the rabbitry. High ammonia levels often lead to outbreaks of snuffles.

**Sore Hocks**

Sore hocks is not a disease, but it can lead to secondary infections. Affected rabbits usually have sores on the portion of their hind legs that are in contact with the floor. These sores often cause the animal to greatly reduce its activity and food intake. If the sores become infected, the rabbit’s health may seriously deteriorate and death could result. Rabbits that develop sore hocks often have less fur on their feet than those that do not acquire this condition.

A predisposition for developing sore hocks may be inherited. Certain breeds, particularly the Rex, seem to be especially prone to sore hocks. Larger breeds, such as the Checkered Giant, are also prone to sore hocks because of their size. Active rabbits are more prone to sore hocks than are inactive rabbits, as well as rabbits that are stressed. If sore hocks become a problem in your herd, consider culling animals that are affected. Do not use them for breeding stock. Breeding this problem out of the herd is possible by careful selection of animals with
thicker guard hairs on the bottoms of their feet.

Prevention is the key to keeping sore hocks out of the herd. Keep cages clean and free from rough surfaces. Place a smooth board in the cage as an alternative to the rabbit always standing on the wire floor. However, this will increase the frequency of cleaning and disinfecting the cage to prevent the wood from harboring any diseases.

To treat sore hocks, apply a topical antibiotic cream prescribed by a veterinarian to the infected area daily. In advanced cases, under the direction of a veterinarian, administer an internal antibiotic, either orally or in an injection, to treat any systemic infections that may occur as a result of the sore hocks.

**Vent Disease or Rabbit Syphilis**

Vent disease is a common reproductive disease of rabbits. Check the external genitalia of all breeding stock regularly for any sores or scabs that may indicate the presence of this disease. Little or no breeding activity when bucks and does are placed together and a decline in pregnancies are two other indications of vent disease. Vent disease can be treated with antibiotics under the direction of a veterinarian.

**Viral Hemorrhagic Disease (VHD)**

The first confirmed cases of Viral Hemorrhagic Disease (VHD) in the United States were reported by the U.S. Department of Agriculture in 2000. The agent of this highly contagious, deadly disease is caused by a virus of the Calicivirus family. The disease is also called Rabbit Calicivirus Disease.

VHD invades the respiratory or digestive tract of the rabbit or enters through scratches and abrasions in the skin. Other possible means of transmitting the virus to a healthy rabbit is by direct contact with an infected rabbit or the feces of an infected rabbit, meat or by-products of infected rabbits, and contaminated equipment.

The VHD mortality rate in infected rabbits is 90 to 100 percent. Three forms of the disease are reported. In the peracute form, finding dead rabbits is the first indication of the disease. In the acute form, the early signs seen include depression, loss of appetite, and difficulty breathing. Within a day or two the rabbit shakes, and exhibits pain and incoordination before dying. There is a mild form of the disease where the rabbit is observed to be sick, recovers, and then is immune to reinfection.

Upon postmortem examination, a pale liver and hemorrhagic lesions throughout the body may be seen. Treatment for VHD is not practical as it develops very quickly and rapidly kills the infected rabbits. Prevention is the key to keeping this disease out of your rabbitry. Quarantine rabbits returning from shows or new to your rabbitry. The incubation period for VHD is short, 48 to 72 hours; therefore, a one-week quarantine is satisfactory. Sanitize and disinfect equipment inside and outside the rabbitry, and restrict visitors or require them to wear disposable boots and gloves and go through a disinfection procedure. State animal health officials should be notified immediately if VHD is suspected.

**Weepy Eye**

The recognized symptom of this disease is a discharge from the eyes that progressively worsens if left untreated. This discharge is usually caused by the bacteria *Staphylococcus aureus* or *Pasteurella multocida*. Advanced cases may result in a blocked tear duct, which can only be opened by a veterinarian. The best procedure is to treat the infection early with an ophthalmic (eye) ointment containing an antibiotic.
Wry Neck

It is easy to diagnose a rabbit with wry neck because its head will be severely twisted to one side or the other. This is usually the result of an infection of the middle ear that adversely affects the rabbit’s equilibrium. Treatment requires long-term antibiotic treatment and even then it often fails. Since it is an abnormal and uncomfortable condition it is highly recommended that afflicted rabbits be culled immediately.

Red Urine

Rabbit urine commonly has a reddish pigment, and unless blood is seen, is not cause for alarm. Rabbit urine frequently contains large amounts of calcium oxalate or calcium carbonate, which is seen as deposits on cage walls or floors, and in the bottom of litter boxes. This red coloration is especially noticeable when the urine is alkaline, usually due to the type of feed eaten.

Molting

A rabbit’s coat is referred to as prime when the hairs have achieved their maximum and even length with a good sheen and are tight (no loose hair). The coat should return to place evenly when rubbed from rump to shoulders. A dull, uneven coat with loose hair is referred to as “un-prime” or “open.”

Molting is the process of growing new fur. Various molts are associated with the rabbit’s age, and are affected by feed, health, season, and temperature. The first molt occurs at about two months of age and lasts until the rabbit is four to six months old. During this molt, the rabbit will develop a thicker, adult coat. There is also an annual molt with most mature rabbits. The annual molt arrives at different times in different geographical areas. Shedding normally starts on the side of the rump and thigh, followed by the back and down over the sides. Rabbits tend to go off feed for a few days before going into a molt. Fiber is extremely important in the diet at this time as the incidence of hairballs becomes greater. A new coat of fur will grow in four to six weeks. Removing dead, loose hairs by brushing the rabbit daily until the presence of loose hair is gone will promote a new coat within the four- to six-week time period.

Hair loss will also occur as the doe prepares to have her litter. While normal, this will produce large hairless areas of smooth skin. This hair will be used in building a nest for her kits. Hair loss can also be the result of external parasites or fungal infections.