

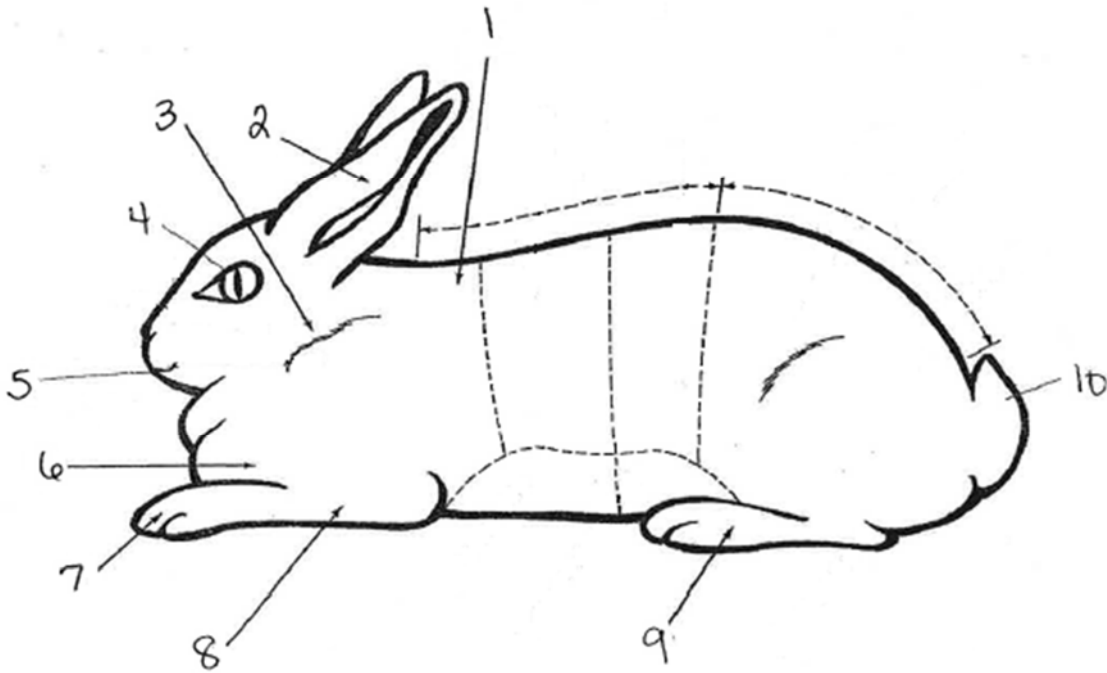
SAN LUIS OBISPO COUNTY RABBIT LEVEL TESTING LEVEL 1

PASSING SCORE FOR LEVEL 1 IS 70%

The test will include identifying body parts, true/false questions, multiple choice and fill in the blank. The following body parts chart is the one that will be used and all other questions will come from the 4-H Cooperative Curriculum System - What's Hopping?, the rabbit project 1 activity book.

LEVEL 1 TEST - STUDY SHEET

RABBIT BODY PARTS



1	Saddle	6	Chest
2	Ears	7	Toes
3	Neck	8	Leg
4	Eye	9	Foot
5	Mouth	10	Tail

Rabbit Rap

Share What You Did

Which rabbits did you like best? Why?
Why do you like the rabbit you chose?

Process What's Important

How did you decide on this breed? If you choose this rabbit what will you have to do to take care of it?

Generalize to Your Life

What other decisions did you make today?

Apply What You Learned

How does making a chart help to make better decisions?

A rabbit hide is called a pelt.

Did you know?



See breeds and varieties in the color insert. The ARBA Standard of Perfection contains most all the breeds.



Rabbit Breeds and Ideal Weight Groups

Four Class Rabbit Breeds	
Small (2 to 6 lbs.)	Medium (over 6 to 9 lbs.)
American Fuzzy Lop Britannia Petite Dutch Dwarf Hotot Florida White Havana Himalayan Holland Lop Jersey Wooly Mini Lop Mini Rex Netherland Dwarf Polish Silver Tan	American Sable Belgian Hare English Angora English Spot French Angora Harlequin Lilac Rex Rhineland Satin Angora Silver Marten Standard Chinchilla
Six Class Rabbit Breeds	
Large (over 9 to 11 lbs.)	Giant (over 11 lbs.)
American American Chinchilla Beveren Blanc de Hotot Californian Champayne D'Argent Cinnamon Creme D'Argent English Lop New Zealand Palomino Satin Silver Fox	Checkered Giant Flemish Giant French Lop Giant Chinchilla



Bounding Ahead

1. Visit a rabbitry. Make a list of the different kinds of rabbits you see. Go to the library and check out a book on your favorite kind of rabbit. Write a one-page report about your rabbit.

Date _____ Initial _____

Rabbit Rap

Share What You Did

What is the use of each rabbit breed you picked? Which breeds were better when used for meat? Why? Which breeds are better for fur? Why?

Process What's Important

How does the end use of your rabbit effect how you might feed it?

Generalize to Your Life

What decisions will you need to make in the rabbit project?

Apply What You Learned

How did this activity help you decide on a breed of rabbit to raise?

A rabbit has five toes on the front feet and four on the back feet.

Did you know



See 4HCCS Rabbit WWW Site www.h4hccs.org

Rabbit Facts

Uses of Rabbits

Breeding stock

Rabbits raised for high quality offspring. Keep good records. Attend shows to have your rabbits' breed characteristics judged. Maintain a high level of quality in your animals.

Meat Production

Rabbits raised to eat.

Fur

Rabbits raised for fur to be tanned and made into novelty, craft and consumer products.

Wool

Rabbits raised for wool. It is important for wool to be clean, durable and easily processed. The Angora rabbit is one breed raised for its wool. If you want to raise Angoras, learn where the wool can be marketed for a profit.

Laboratory Use

Rabbits raised to be used by laboratories for research. Licenses may be required.

Pets

Rabbits raised for companionship. Pet stores may be a place for you to sell extra rabbits.

Bounding Ahead

1. Talk to two local rabbit breeders. Decide what they use their rabbits for. Ask why they made that choice.

Date _____ Initial _____

2. Visit someone doing something you would like to do when you grow up. Talk to them about their job. List what the person likes and doesn't like about their job. Share your list with your helper.

Date _____ Initial _____

Get a Grip

It is important to learn how to pick up and carry a rabbit. Rabbits can scratch or bite when they do not feel safe.

Activity:

Rabbit Skill:

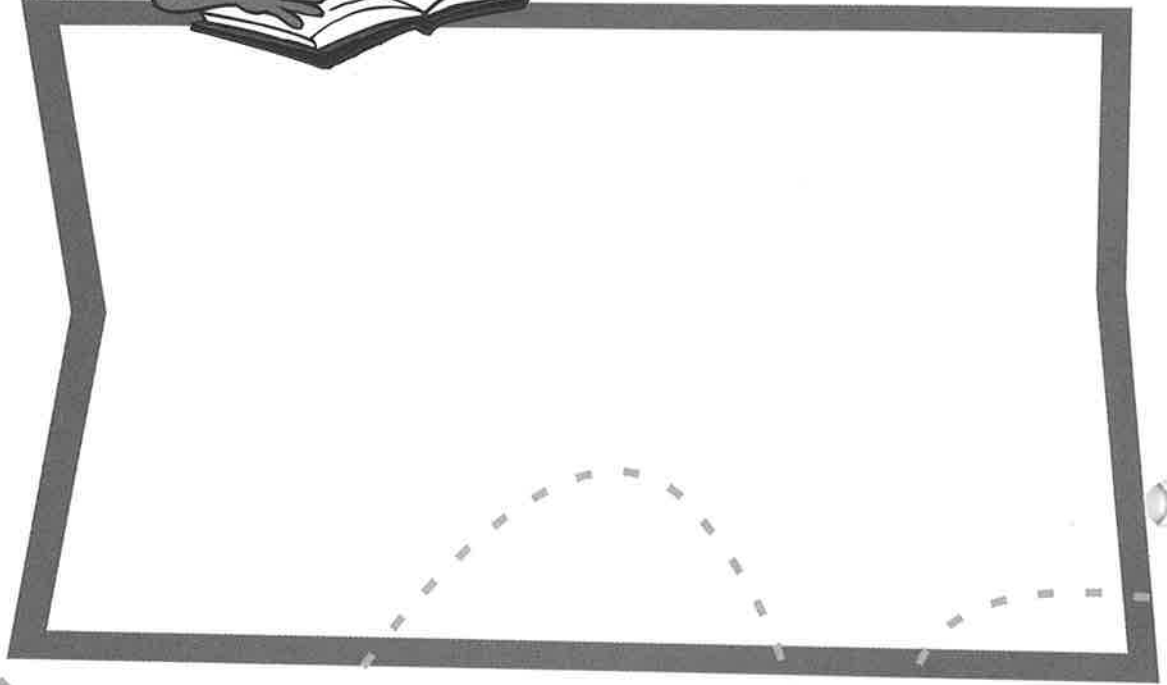
Life Skill:

Success Indicator:

Practice holding a rabbit.
Handling rabbits
Communicating with others
Demonstrates how to hold a rabbit.

“Hop to it!”

Use a stuffed model rabbit to practice picking up a rabbit. When you are ready, show your helper or your parent how you do this with a live rabbit. Tape a picture of you holding a rabbit in the frame.



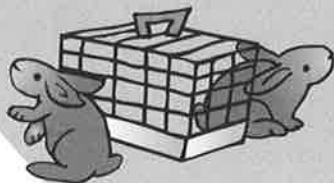
Removing from a Cage

Place the palm of your right hand under the middle of the abdomen and lift. Take the rabbit out of the cage with the backside first and the head last. When the rabbit is taken out of the cage, place your left hand around the hindquarters.

Turning a Rabbit

When you are showing or checking your rabbit you will need to examine the underside of your rabbit. Try this style of turning your rabbit.

Have the rabbit face your left side and firmly hold the rabbit's ears in the palm of your hand. Hold the head securely with a fold of fur and skin at the nape of the neck between your fingers and the palm of your right hand. Lift the rabbit with your left hand cupped around the hindquarters. Support your rabbit with your left hand as you turn the rabbit over. Complete the turn, rest the hindquarters on a table so that your left hand is free to examine the rabbit. Finish the examination. Reverse the turn supporting the rabbit with your left hand on the hindquarters. Pose your rabbit after you set it down.



Rabbit Rap

Share What You Did

How did you pick up a rabbit?
What happened the first time you picked up a rabbit?

Process What's Important

Why is practicing during the cooler part of the day important?
Why don't you pick a rabbit up by its ears or legs?
What did you learn about the rabbit by picking it up?

Generalize to Your Life

How did showing others how to handle a rabbit help you learn better?

Apply What You Learned

Why is learning an important part of each day?



You might want to use the model made from the 4HCCS Rabbit Pattern 4HCCS BU-7199 to practice your handling skills.



Picking Up a Rabbit

- With the rabbit facing you, place your right hand under the rabbit's chest and stomach.
- Balance the rabbit on your right hand and lift it up a little.
- Place your left hand under the rump of rabbit until the rump is resting on your hand.
- Move the rabbit forward until its head is securely tucked under your left arm.
- Remove your right hand or gently lay your right hand on the back of the rabbit for added safety while moving.
- Never lift or carry a rabbit by its ears or legs. You could injure the animal.

These six steps to pick up a rabbit really



Bounding Ahead

1. Show your group how to handle a rabbit. Tell what you are doing and why.

Date _____ Initial _____

Rabbit Rap

Share What You Did

Where are each of the parts listed found on the rabbit? What did you learn from doing the activity?

Process What's Important

How are a rabbit's feet and ears different than yours? Why do they need to be? How can learning the parts of a rabbit help you be a better rabbit raiser?

Generalize to Your Life

How did sharing your rabbit crossword answers with a friend or adult helper help you improve your communication skills?

Apply What You Learned

How would you like to improve the way you talk to others?



Parts of a Rabbit

Belly - The lower part of the body, abdomen. From the bottom of the last rib to the pelvis. Contains the intestines.

Chest - The front part of the body between the forelegs and neck, the breast.

Cheeks - The sides of the face below the eyes.

Forehead - The front part of the head between the eyes and the base of the ears.

Hind (rear) Leg - The foot, hock, stifle (knee) and hip joint.

Hindquarters - The rear part or section of the body; includes the loin, hips, hind legs and rump. From the last rib back.

Hip - The joint that attaches the hind legs to the trunk of the body.

Hock - The joint in rabbits that is like the ankle in man. The joint below the stifle.

Knee - The second joint of the hind leg - connects the thigh to the leg. Also known as the stifle.

Loin - That portion of the back on each side of the vertebrae from the last rib posterior to the hip joint.

Neck - Connects the head to the body.

Nostrils - The two openings of the nose leading to the internal structures of the head.

Ribs - The curved portions of the sides immediately back and under the shoulders and above the belly.

Rump - The upper, rounded part of the hindquarters.

Shoulders - The upper joint of the foreleg, connecting it to the body.

Look in Rabbit Talk 1 for other definitions of parts.

Bounding Ahead

1. Now that you know the parts of a rabbit, use a picture to "show 'n' tell" a friend or family member where the parts are and the shape of each for your breed.

Date _____

Initial _____



Rabbit Rap

Share What You Did

What did you include in your plan?
What did you learn about rabbit care?

Process What's Important

How do your rabbits communicate their needs?

Generalize to Your Life

How does developing a plan help you?

Apply What You Learned

How will your plan help you care for your rabbit(s)?



Rabbit Management Tips

Cage

An all-wire cage for a 6–7 lb. rabbit should be at least 2' wide by 18" high by 2' long. You'll need a sitting board 6–8" square or larger to prevent sore hocks and feet.

Temperature

Outside cages need a shady roof and protection from rain, wind, drafts, dampness and direct sun during the hot summer months. To cool a rabbit, put a gallon jug of frozen water in the cage. Put long wet towels on the sides of the cage. Dampen the roof with cool water.

Cleaning/Sanitation

Remove all droppings from the cage every day. At least once a month, clean and disinfect the cage and tray. Use a mild bleach solution. Rinse well.

Feed

Rabbits need a balanced diet to grow and reproduce. Feed them a commercially prepared 14%–16% protein rabbit pellets daily. The amount fed will vary with the age, weight and activity level of each animal. Five to six ounces will usually keep a mature New Zealand rabbit not in production in good condition. Small breeds need two to three ounces of pellets. Small amounts of fresh hay and grain may also be given. Feed a doe and her litter all they will eat each day. (Feed the doe only two to four ounces the first day after kindling to prevent caked udders.) Give weaned bunnies all they will eat.

Do not overfeed or let uneaten rabbit pellets stay in the dish day after day. Store the feed in a water/air tight container away from the sun and moisture so the pellets keep their nutritional value.

Check to see if a rabbit is being fed enough or too much by feeling the skin covering the ribs and back bone. If it's too thin, feed it more; if too fat, feed it less.

Water

Rabbits need plenty of fresh, clean ice-free water each day. Clean the crock or water bottle every few days with a mild bleach solution and warm soapy water. A doe and her litter will drink about a gallon of water a day.

Bounding Ahead

1. Learn more about animal welfare and its importance. Give a talk to your group and share what you learned.

Date _____ Initial _____

Gears, Goods & Gadgets

What do you need to take care of rabbits? There are many pieces of equipment that will make your job easier. The key is to identify and learn about this equipment.

Activity:

Identify basic rabbit equipment.

Rabbit Skill:

Managing a rabbitry

Life Skill:

Making decisions

Success Indicator:

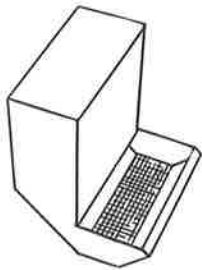
Uses decision making skills to correctly identify equipment used in raising rabbits.

« Hop to it! »

Match the pictures of the equipment with their names. Check the Rabbit Facts section for more information about each piece of equipment. Under each picture show its approximate cost.

- a. Nest Box
- b. Crock
- c. Feeder
- d. Cage
- e. Water Bottle

Rabbits don't need very much equipment.



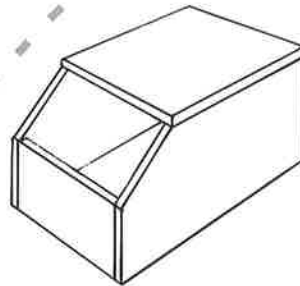
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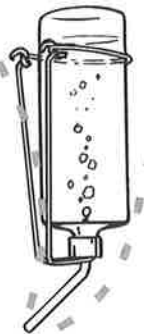
2.



3.



4.



5.



Basic Equipment

Feeders

The most practical kind of feeder is a metal self-feeder with a screened bottom or a bottom that is perforated by many 1/8-inch holes to allow fines to sift out.

Mount the metal self-feeder on the side of the cage 4 inches from the cage bottom for giant breeds, 3 to 4 inches from the bottom for medium breeds and 2 inches from

the bottom for small breeds.

Feeders mounted on the side take less space, are more sanitary and can be filled from outside the cage.

No matter what kind of feeder you choose, remember to check it daily and remove any dirty or moldy feed.



Rabbit Rap

Share What You Did

What equipment do you need to get started raising rabbits?

Process What's Important

What does it cost to get started?

Generalize to Your Life

How do you decide which equipment to use with your rabbit(s)?

Apply What You Learned

Now that you have decided what equipment you need, how will you obtain it?

Rabbits are easily trained to use a litter box just as a cat does.

Did you know?

Rabbit Talk Words

Nest box, Crock, Waterer, Feeder

Acknowledgments: Written by Jeff Dick



Basic Equipment



Water Containers

Ceramic crocks with curved interior sides make useful water containers. They do not tip over easily. Rabbits do not chew on them.

Some people like unbreakable vinyl crocks for use all year because:

They break less when water freezes and expands. They are easier to clean and do not collect bacteria.

The bottle-tube waterer has a rubber stopper with a metal tube inserted into a plastic bottle. The bottle is mounted upside down on the outside of the cage. The tube lets the rabbit drink water without wasting or spilling it. The tube enters the cage about nine inches above the floor.

An automatic waterer provides plenty of clean water without much work. This waterer costs more to buy. It often has a break pressure tank with a float valve, a supply pipe and a valve for each cage.

Rabbits need clean, fresh water at all times. A rabbit that needs more water will eat less food and grows slower.

Nest Box

Provide nest boxes for your does before they give birth. A nest box keeps the kits dry, protects them from hot or cold weather, and hides them from predators.

The size of the nest box is important. Nest boxes that are too large can cause the death of a kit. When a box is too big the doe may stay longer than needed to nurse her young. She may soil the bedding with her droppings. This can make the bedding damp and leave a strong ammonia odor that may cause respiratory illness in rabbits.

Cage

Wire cages are easier and quicker to clean. They must be used with some type of shelter or hutch.

Bounding Ahead

1. Go to an agriculture supply store and find approximate costs for a cage, crock, water bottle, feeder and nest box.

Date _____ Initial _____

2. Visit with a rabbit breeder to ask what equipment is recommended.

Date _____ Initial _____

Rabbit Rap

Share What You Did

What size cage does your rabbit need? How did you build or purchase housing for your rabbits? What is most important to think about when deciding on rabbit housing?

Process What's Important

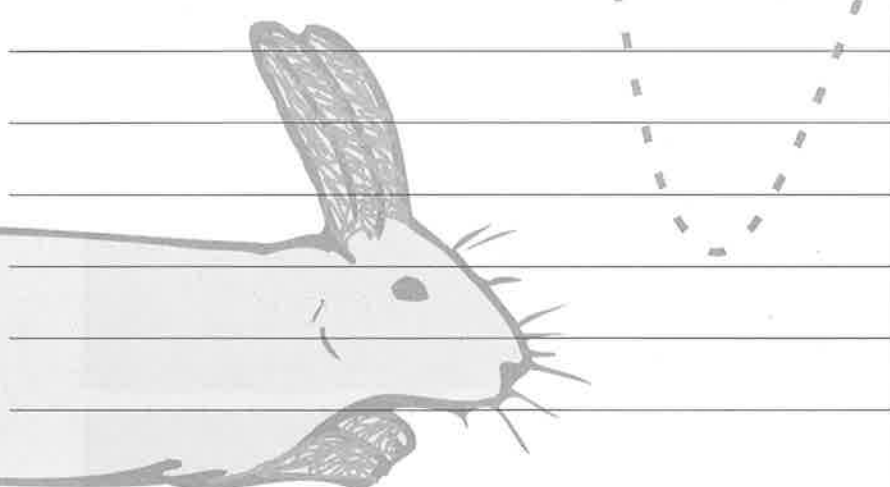
What is the cost difference between building a cage and buying one?

Generalize to Your Life

Describe how following instructions made it easier to build your cage.

Apply What You Learned

How will good housing help you be successful with this project?



The largest rabbit breed is the Flemish Giant.

Did you know?



Acknowledgments: Written by Jeff Dick

Rabbit Facts

Building a Wire Cage

Make plans for housing before you purchase your rabbits. Housing may be a cage in the garage, a hutch in the backyard, or a special building with cages for a number or animals.

Use 1/2 x 1 inch, 14-gauge galvanized wire for the floor (place the 1/2-inch side face up and toward the rabbit's feet).

Use 1 x 2 inch, 16-gauge wire for the top and sides.

The size of the cage varies with the size of the breed:

Length x Width x Height

Small breeds

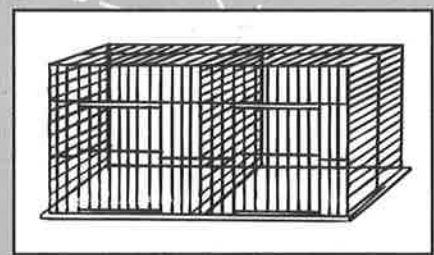
24" x 24" x 16" cage

Medium breeds

30" x 30" x 18" cage

Large breeds

48" x 30" x 18" cage




Bounding Ahead

- Shop at a local feed supply store to compare the cost of pre-made cages. Record your findings. Compare the sets of prices. Which is a better choice for you?

Date _____ Initial _____

Hidden Secrets

In addition to daily management records, breeding records are an important part of your project. When breeding show rabbits, about one in five will be good enough to keep for reproduction. Use the rest for processing or other disposable markets. Breeding records will be your best tool to help you decide which rabbits to cull from your herd. As you have more experience with rabbit breeding, your records will include a herd book and show record.



Activity: Complete a rabbit record.
Rabbit Skill: Selecting rabbits to improve your herd
Life Skill: Record keeping
Success Indicator: Selects and enters appropriate information into rabbit records.

A herd book includes a complete pedigree of each rabbit and a performance record of service bucks. Contact the A.R.B.A. and feed companies for more information about keeping herd books and show records.

“Hop to it!”

1. Prepare a Breeding Record. Use the following information to fill in the first line of the record.

Bred doe DH6 on 1/3/00 to buck H6. She kindled on 2/4/00 and had 9 kits. Eight were alive and one was dead. Four kits died four days later. Four kits were weaned.

Skip the second line of the breeding record and complete the last two lines using information from your rabbitry or a neighbor's if you don't have your own rabbitry at this time.

2. Prepare a Herd Record. Enter the following information on the Herd Record shown:

Copper Satin doe DH6 was bred to Copper Satin Buck H6. She kindled on 2/4/00. There were 9 kits—8 were alive and all were copper—4 does and 4 bucks. Four kits died—two does and two bucks. Four rabbits were weaned. Their ear tattoo numbers were buck S1 and S2 and does S3 and S4. Does S3 and S4 were sold on 6/3/00 to Mary Clark. Buck S1 was kept as a replacement buck. Buck S2 died on 5/1/00.



Rabbit Breeding Record						
Tattoo of Doe	Tattoo of Buck	Date Bred	Date Kindled	No. Born Alive	No. Dead at Birth	Comments

Rabbit Herd Record							
Ear Tattoo	Sire	Dam	Sex	Color	Date Born	Date Sold	Comments

Rabbit Rap

Share What You Did

What did you include in your records?

Process What's Important

How do records help you with your project?

Generalize to Your Life

What other records do you and your family keep?

Apply What You Learned

Describe how you would use the information to cull non-productive does, identify your best bucks and produce larger litters?

Rabbit Facts

Types of Rabbit Records

Pedigree Record - The family tree of each individual rabbit is listed. It shows the sires and dams and the grand sires and dams. It lists the color and senior weight of each rabbit. There is a place for registration and grand champion numbers of each rabbit. A three generation pedigree is needed to register your rabbit.

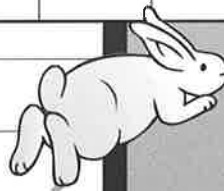
Herd Record - This record includes every rabbit in your rabbitry. Listed are the sire, dam, sex, color and date of birth of each rabbit. Also the date it leaves your rabbitry. Comments such as buyers' names or rabbit show winnings help keep track of each rabbit.

Breeding Record - Each breeding is recorded on this record. It will help you decide which does are the most productive and which bucks are the best.

Show Record - A show record includes dates and places of shows entered plus information on classes and awards received. It helps the exhibitor know the faults and good points of each rabbit.

Rabbit Show Record

Name of Show	Location	Date Entered	Ear Tattoo Number	Classes Entered	Number in Class	Show Placing	Show Premiums



Bounding Ahead

1. Prepare Herd Records on all your rabbits. Share your records with your helper.
Date _____ Initial _____
2. Explore different record keeping systems available from feed dealers and the ARBA. Explain the differences to your helper.
Date _____ Initial _____
3. Develop a computer system for pedigrees.
Date _____ Initial _____
4. Give a demonstration or illustrated talk about your record system.
Date _____ Initial _____

An average rabbit will eat four pounds of rabbit pellets to gain one pound of weight. This is called feed conversion.

Did you know



Contact the ARBA for pedigree forms. Many feed companies also have record forms available.

Rabbit Rap

Share What You Did

Where did you find the symptoms and treatment?

Process What's Important

What are some ways to keep your rabbits free from disease?

Generalize to Your Life

How do you make sure you are healthy?

Apply What You Learned

How can you use what you learned to keep your rabbits from getting these parasites?

Have you checked your rabbit's ears lately?



Acknowledgments: Adapted from Kansas 4-H Rabbit Curriculum Notebook.



External Parasites of Rabbits

Ear canker or ear mange—Ear canker is caused by common ear mites (*psoroptes cuniculi*). The mites live in the ear canal and damage the skin. A brown, waxy material covers the inner ear. This encrustation is dried blood, cellular debris, keratin and mites in various stages of development.

An effective treatment is to remove the encrustation with a cotton swab soaked in mineral or vegetable oil. Allow some of the oil to run into the ear passage. Repeat this procedure in four days. A 0.25 percent suspension of Lindane in mineral oil is an affective medication. Ivermectin has proven to be very effective at controlling ear canker. Inject 0.20 cc of Ivermectin just beneath the skin at the nape of the neck. Remember all your rabbits need to be treated if you find an infected animal. Sanitation is important for control.

Mange—Mites cause the skin to become dry, scaly, irritated and itchy with hair loss in the affected areas. Treat with a powder containing 0.25 percent Lindane. The best control method is good sanitation.

Fleas—Rabbit, dog and cat fleas occasionally have been reported on rabbits. There are four stages in the life cycle of a flea—egg, larva, pupa and adult. The eggs are deposited in nesting material and cracks of the nest boxes. The eggs hatch into larvae who form the pupae from which the adult emerges. Treat the rabbits by dusting with a commercial preparation of Pyrethrum or Rotenone. Properly destroy nesting materials and wash the nest boxes using bleach. Keep cats and dogs away from all rabbit supplies, especially nesting materials.

Bounding Ahead

1. Report to your rabbit group how rabbit breeders and others who raise rabbits can share information and help others avoid many rabbit herd health problems.

Date _____ Initial _____

Sanitation Situation

Practicing sanitation is the best way to control disease in your rabbitry. Your rabbits depend on you to keep them healthy. In this activity you'll outline how to keep everything clean.

Activity:

Show how to clean rabbit equipment.
 Keeping rabbits healthy
 Communicating with others
Success Indicator: Demonstrates how to sanitize rabbit equipment and facilities.

Rabbit Skill:

Life Skill:

Success Indicator:

Rabbits like fresh food and a clean pen.

“Hop to it!”

Complete the chart for each of the four situations. Describe how the situation might effect the rabbit and what you can do to prevent it.



Sanitation Situation	Effect on Rabbit	Prevention
Algae growing in water bottle		
Matted fur stuck to bottom of hutch		
Piled manure beneath hutch		
Molded, dried feed stuck to side of feed crock		

Give an illustrated talk or presentation on cleaning rabbit equipment and facilities. In the space below list 10 things you do to keep your rabbits healthy.

10 Ways I Keep My Rabbits Healthy

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Rabbit Rap

Share What You Did

What did you include in your talk? How do you keep your rabbits healthy?

Process What's Important

How do you disinfect equipment? How does clean equipment help prevent diseases?

Generalize to Your Life

How did giving a presentation help you learn about cleaning equipment?

Apply What You Learned

How will you use with your rabbits what you learned about preventing diseases?

A pet male rabbit should be neutered to prevent a tendency to spray urine.

Did you know?



Rabbit Talk Word Disinfect



Cleaning Equipment

Clean cages and equipment help prevent diseases in rabbits. Sanitize the equipment every month or whenever your rabbit has had a disease. Use a chlorine bleach solution to sanitize.

Put one cup of chlorine bleach in a gallon of water. Use this solution to wash the crocks and feeders. After you have removed the fur and manure from the cage with a wire brush, put some of the chlorine bleach in a spray bottle and spray the entire cage. Let it dry before you return the rabbits to the cage. If the cage has a wooden floor, it needs to be cleaned every day and sanitized every week. Other disinfectants can be used, but make sure they will not irritate the rabbits.

Cleaning Tips

- Clean the feeding and watering equipment daily. Clean the hutches and cages at least once a week.
- Let your equipment dry in the sun. Direct sunlight is also a disinfectant.
- Use a vacuum or a stiff bristle brush to remove loose fur on cages and other equipment before it becomes a problem.
- Disease can also come from using old cages or nest boxes discarded by other breeders or former rabbit enthusiasts. Do not use equipment from these sources until they are disinfected with bleach and direct sunlight.

Bounding Ahead

1. Make a one-year health plan for a rabbitry.

Date _____ Initial _____

2. Inspect a rabbitry and make a recommendation to improve any potential health problems.

Date _____ Initial _____

Chef Hare

Chef Hare needs your help to prepare meals for his many friends. The only problem is, he is not sure what rabbits need to eat to stay healthy. He does know that a balanced diet consists of the right amount of proteins, carbohydrates, fats, vitamins and minerals. With your help, Chef Hare will prepare a balanced diet plan and keep all of his friends healthy.

Activity:

Prepare a diet plan for rabbits.

Rabbit Skill:

Feeding rabbits

Life Skill:

Planning and organizing

Success Indicator:

Outlines a dietary plan for a rabbit project.

What is included in your rabbit's diet?

« Hop to it! »

Below is a list of feed ingredients Chef Hare is preparing for his friends. Circle at least eight items he needs to include to make a balanced diet.

Menu

Alfalfa	Vitamin E
Wheat	Vitamin K
Oats	Chewing Gum
Corn	Water
Calcium	Carrots
Phosphorous	Grass
Vitamin A	Candy bar
Vitamin D	



Storing Feed

Store feed in a container with a tight-fitting lid (like a garbage can, for example). Do not store feed for longer than 3 or 4 weeks. Feed stored for longer periods will deteriorate and lose its nutritional value and taste.



Rabbit Rap

Share What You Did

What did you include in the rabbit's diet?

Process What's Important

How does a balanced diet keep your rabbit healthy?
What are the five nutrients a rabbit needs in its diet?

Generalize to Your Life

How do your parents use these five nutrients to prepare meals for you?

Apply What You Learned

What will you feed your rabbits to be sure they have a "balanced" ration?



Rabbit Feed and Feeding

Feed is the largest expense in raising rabbits. Rabbits need a well-balanced ration that meets their nutritional needs and tastes good. A commercially prepared rabbit ration from a reputable feed company usually supplies the right amounts of protein, energy, fiber, minerals and vitamins to meet your rabbits needs. Most commercially prepared pellets are round and about 1/4 inch long.

Different rabbits need different amounts of feed. In general, 2 to 3 ounces of pellets daily are enough for small breeds, 3 1/2 to 4 ounces for medium breeds and 4 to 8 ounces for the larger breeds. Adjust feed to meet the needs of the individual animal.

A regular feeding schedule is important. Try to feed at about the same hour each day. Some breeders feed both at night and in the morning.

Bounding Ahead

1. Fill in the blanks using these words: proteins, fats, carbohydrates, minerals, vitamins:

_____ such as, calcium and phosphorus are very important in the structure of bones and teeth.

_____ are made up of smaller units called amino acids.

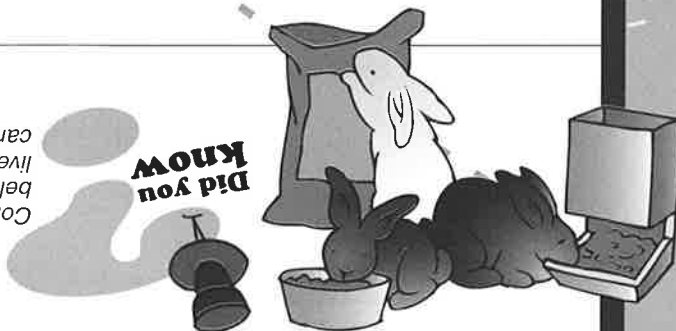
_____ are stored energy source composed of carbon, hydrogen and oxygen.

_____ in the diet seem to enhance a shiny, lustrous coat on your rabbit.

A, D, E & K are symbols for _____, which support all functions of the body.

Contrary to popular belief, rabbits cannot live on lettuce and carrots alone!

Did you know!



Rabbit Reproduction and Marketing

Rabbit Reproduction

How old should a doe be before she is first bred to the buck? How should the mating occur? How soon after the doe kindles should she be rebred? These are just some of the questions about rabbit reproduction that you need to know to be a successful rabbit raiser. See what you now know and what you can learn.

Activity:



Arrange the statements about rabbit reproduction in the order in which they occur.

Rabbit Skill:

Breeding rabbits successfully

Life Skill:

Learning to learn

Success Indicator:

Presents and justifies to the helper the sequence of rabbit reproductive practices.

“Hop to it!”

Here are 13 statements related to rabbit reproduction. Number each statement from 1–13 in the order in which they occur. Begin with a doe that has not been bred (e) and end with the litter being weaned (k). Then explain to your helper what each statement means.



- ___ a. A mature male can be used on a daily basis to mate with one or two does.
- ___ b. Take the doe to the buck's cage for mating.
- ___ c. The doe is most receptive to the buck about 72 hours after kindling.
- ___ d. The doe has two weeks to recuperate before kindling the next litter.
- 1** e. Begin with a doe that is sexually mature.
- ___ f. The doe kindles.
- ___ g. Remate the doe in eight to 12 hours to increase litter size and conception rate.
- ___ h. The doe is palpated 12 to 14 days after mating and found to be pregnant.
- ___ i. Examine the external genitals of the buck and doe for any infections prior to mating
- ___ j. Leave the doe in the buck's cage only long enough for the mating to occur.
- 13** k. The litter is weaned after she is found to be pregnant.
- ___ l. The buck will mount the doe. After the doe raises her hindquarters and if the mating is successful the buck will fall off backwards or to the side.
- ___ m. The female rabbit ovulates one hour after mating.



Rabbit Talk Words

Reproductive tract, Egg (ovum), Fertilize, Conception rate, Ovulation

Rabbit Rap

Share What You Did

How did you decide the order of the statements?

Process What's Important

Why is knowing each step of the breeding cycle important?

How does the breeding time change if does have small litters, are commercial production does or are fancy rabbits?

Generalize to Your Life

What breeding schedule do you have for your rabbits?

When you need to find information such as in this activity what resources do you use?

Apply What You Learned

How does keeping a standard breeding schedule keep your rabbits healthy?



Does can handle six to eight kits depending on the breed.

Did you know



Rabbit Facts

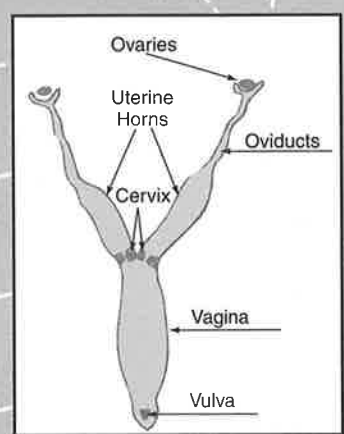
Rabbit Reproduction

Breed Differences. Miniature breeds will be sexually mature at 4 to 5 months. Medium size rabbits will take 5 to 6 months and the commercial breeds will become sexually mature at 6 to 7 months. The giant breeds don't become sexually mature until eight months of age or more.

Condition. Make sure does do not become too fat. Extreme fat accumulation within the doe's abdominal cavity is the number one cause of breeding difficulty. It acts as a physical barrier to prevent the egg (ovum) from entering the reproductive tract to be fertilized. The conception rate is greatly reduced.

Light. Place does in the lightest area of the rabbitry or use artificial light. Rabbits need 14 to 16 hours of daylight.

Breeding. Rabbits will breed almost at any time of year. The female rabbit ovulates following mating. The usual time between (mating) and ovulation is 10 hours. The doe ovulates immediately following a pregnancy. This is why you can breed a healthy doe that loses her litter immediately.



The vulva of the doe in heat is usually purple to reddish pink and somewhat swollen. This is a good indication that the doe will conceive if mated at this time. Usually the vulva is a pale pink.

Bounding Ahead

1. When would you breed a Californian doe to show her offspring in the 6 to 8 month classes at a July 20-25 county fair? Discuss with your helper how you figured the time to breed.

Date _____ Initial _____

Kit 'n Kaboodle

You need to provide a nest box for your doe before she gives birth. A nest box keeps the kits dry, protects them from very hot and cold weather and hides them from predators.

Activity:

Rabbit Skill:

Build a nest box.
Constructing rabbit facilities

Life Skill:

Planning and organizing

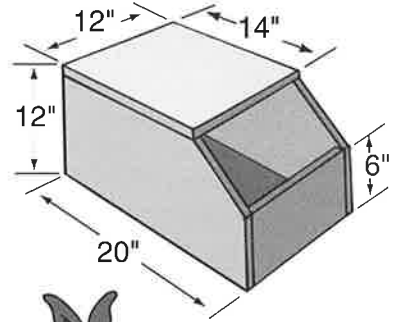
Success Indicator:

Plans and completes a rabbit nest box.

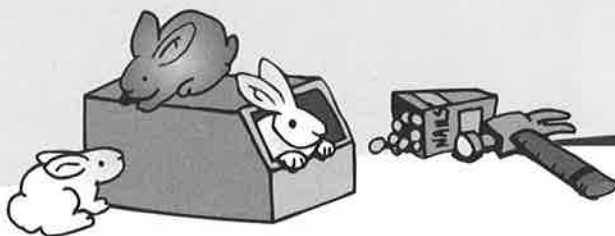
“Hop to it!”

After careful planning and determining the needed dimensions, build a nest box. Show your nest box design including dimensions and materials used. A drawing of one kind and size of nest box is shown.

What kind of nest box will you build?



My Nest Box Plan



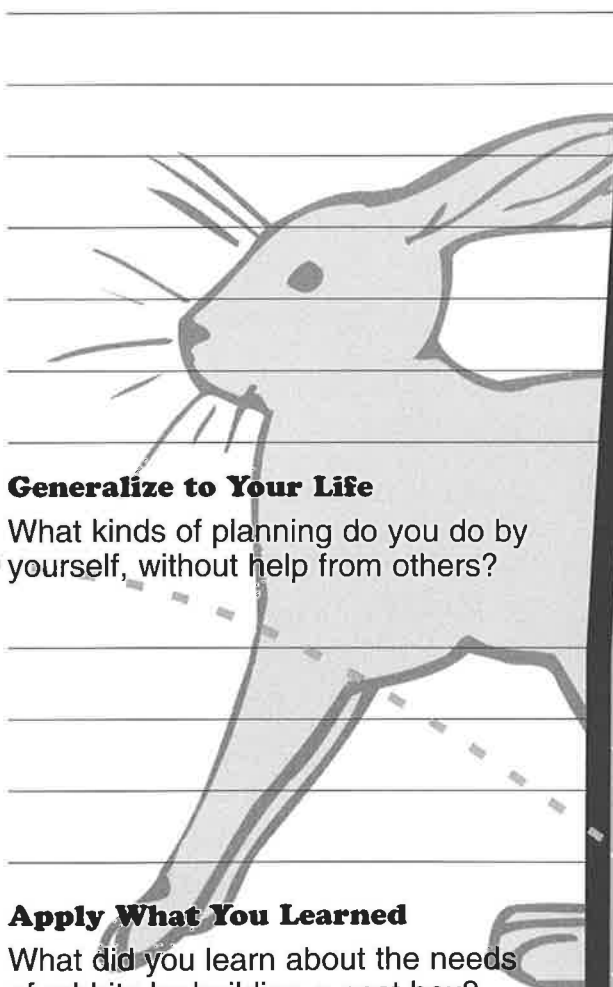
Rabbit Rap

Share What You Did

Describe how you planned the building of your nest box.

Process What's Important

What are some other plans you have made for your newborn kits?
What's most important about the design of a nest box?

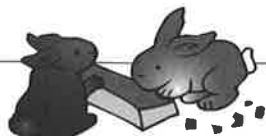


Generalize to Your Life

What kinds of planning do you do by yourself, without help from others?

Apply What You Learned

What did you learn about the needs of rabbits by building a nest box?



Acknowledgments: Written by Jeff Dick



Rabbit Nest Box

Nest boxes can be made from many different materials and designs.

Size

A nest box needs to be slightly larger than the doe that will be using it. A nest box that is too large can be a cause of death to litters. The doe will stay in the box after nursing and foul the box. Damp bedding containing her urine and droppings can create respiratory illness in the kits. A general practice is about 3 inches longer than the doe and about 2 inches wider. Giant breeds require the sides to be approximately 12 inches high, medium breeds need sides about 9 inches high. The smaller breeds need sides only 6 to 7 inches high.

If you choose a nest box with a partially closed top, drill several holes near the top of the back wall. This allows body heat to escape from the nest and omit some moisture in the box.

Materials

The three basic materials for nest boxes are wood, metal and wire. The wooden nest box can be made of scrap lumber. Wooden boxes provide warmth in cold weather and can be used for many years. Metal boxes are not as warm in cold weather. They are light weight for ease of cleaning and storage. They have a replaceable or disposable bottom that provides ventilation in warm weather. Wire nest boxes may be the most sanitary of all types. They have a disposable liner that goes in them and can be discarded after use.

Cleaning

Clean and disinfect after each use. Some breeders have one nest box for each doe and use the same box for the same doe every time. Often the nest boxes are scraped and washed with disinfectant or warm water mixed with household bleach after each use. If possible, expose them to natural sunlight until they are completely dry.

Straw, hay, shredded paper, non-toxic wood shavings, etc. may be used for nesting material. Clean straw is easy for the rabbits to make nests.

Bounding Ahead

1. Describe to your helper what you would do one week prior to the doe kindling to one week after she kindles.

Date _____ Initial _____

Baby Boom

When beginning your rabbit project, you will soon discover working with young rabbits requires a lot of hardwork. A critical time is during kindling. Just as the kits will depend on the doe for their care, the doe will depend on you for special care.

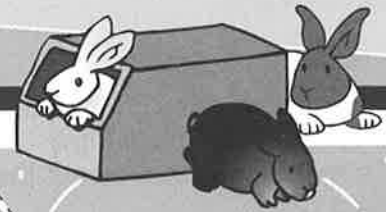
Activity:

Rabbit Skill:

Life Skill:

Success Indicator:

Describe kindling care.
Caring for young rabbits
Communicating with others
Demonstrates young rabbit care.



“Hop to it!”

Use the library, world wide web, local rabbit breeders and/or your county extension office to research material on rabbit kindling. Use the information to develop an illustrated talk with posters, pictures, etc. to describe the care needed for kindling. Outline your demonstration on a separate paper. Include in your talk answers to frequently asked questions like these:

- What do kits look like when they are born?
- What kind of care does a doe give to her kits?
- What should the average size (number) of a litter be?
- How many teats does a doe have for nursing?
- What might you need to do to care for kits if a litter is too large?
- When are kits weaned?
- How many litters can a doe have each year?
- When should the nest box be removed from the cage?
- What special kinds of care does a doe and her kits need?

“Rabbit Rap”

Share What You Did

What did you include in your talk?

Process What's Important

Why is kindling such an important time?

Generalize to Your Life

What did you learn by preparing a talk?

Apply What You Learned

How does having rabbits help teach you responsibility?



Kindling Tips

Nest Box - Put the nest box in the doe's hutch about 28 days after the doe has mated. Use clean straw or other nesting materials. Use a sheet of Styrofoam between the bottom of the nest box and a solid floor to help keep the box warm in the winter.

As soon as your doe has kindled, check the nest box and remove any bloody masses and dead kits. Check the nest box every day during the summer months. If necessary, the kits may be handled. The doe will not neglect her kits because they have been handled. If your doe has 12 kits but can only feed six, you will want to foster off six of the kits.

Feed - After you are sure the doe is pregnant, gradually increase her feed. Do not overfeed because a fat doe has trouble kindling (giving birth). Cut down on the feed to the doe for a couple days after kindling. Then gradually increase it until about the 10th day so she is getting all the feed she wants.

Water - During kindling a doe may be thirstier than usual. Give her all the water she wants.



“Bounding” Ahead

1. Make a display or poster showing the things you learned about rabbit kindling.

Date _____ Initial _____

2. Make at least 10 questions about kindling and quiz your family or use the questions in a quiz bowl.

Date _____ Initial _____

Rabbit Talk Words

Kindling, Kits, Gestation, Nest box

Acknowledgments: Adapted from Kansas 4-H Rabbit Curriculum Notebook.

Off to Market

Think about it...for many people, raising rabbits is a business. If you are in the business of raising rabbits, you will need to find a market for your rabbits. How well you do in marketing often depends on your interests, how well you manage your business, what you learn about the market in your area, how well you reach that market and how well you serve it.

Activity:

Rabbit Skill:

Life Skill:

Success Indicator:

Identify rabbit markets.
Exploring rabbit marketing
Communicating with others
Interviews someone about available rabbit markets.

The nursery will purchase all the manure my rabbits produce.

What markets did you find?

Hop to it!

See what markets for rabbits you can discover in your community. Consider visiting a food market, a pet store, rabbit breeders at a rabbit show, the garden supply store or nursery plus other possible markets for rabbit and rabbit by-products. Record what you discover.



Local Markets for Rabbits and Rabbit By-products

Name of Business	Type of Business	Contact Person	What You Discovered

Rabbit Rap

Share What You Did

Where did you explore potential markets?
What did you learn about marketing rabbits?

Process What's Important

Why is it important to have a market for your rabbits?

Generalize to Your Life

How can interviewing a store manager help you improve your communication skills?

Apply What You Learned

What could you do to market rabbits in your community?

Rabbit Facts Marketing

Rabbit marketing opportunities include selling breeding stock, rabbit meat, tanned fur, wool from Angoras, animals for laboratory research, pets and rabbit by-products such as manure and earthworms.

Bounding Ahead

- Develop a plan to market your rabbits. Consider all possible markets as shown in Rabbit Facts and Tips.
Date _____ Initial _____
- Give a short talk to your family or helper on at least five important rabbit by-products.
Date _____ Initial _____

Rabbit Talk 1



A

ARBA - American Rabbit Breeders Association.

B

Back - The entire top part of the rabbit from neck to tail. The backbone and vertebrae are in the back.

Balanced ration - A ration that has the proper proportions of individual ingredients to provide for nutritional needs of the rabbit.

Belly - The lower part of the body containing the intestines—the stomach. (When defining color area: The underbody of the rabbit from the forelegs to the crotch area.)

Blemishes - Flaws or defects, especially those that affect appearance.

Breed - A race or special class of domestic rabbits that have specific fur markings and texture, shape, size and growth. A breed may be further divided into varieties. Examples: the Black, Blue and Tortoise varieties of the Dutch breed. Also: to breed is to mate.

Breeder - One who breeds or raises a special variety or varieties of rabbits. The breeder follows standards or rules to keep the breed strong and healthy.

Buck - An unaltered male rabbit.

Bunny - A pet name for a rabbit.

C

Cheeks - The sides of the face beneath the eyes.

Chest - The front part of the body between the forelegs and neck—the breast.

Condition - The physical state of a rabbit; its health, cleanliness, texture, moult of fur and grooming.

D

Dewlap - The fold or folds of loose skin hanging from the throat of a doe.

Doe - An unspayed female rabbit.

F

Fertility - The ability to reproduce, or have young.

Flank - The sides of the rabbit, between the ribs and hips, above the belly.

Foot - That part of the leg on which the animal walks or stands. On the foreleg—that part below the ankle or pastern. On the rear leg—that part below the hock joint.

Four class rabbits - Rabbit show category for all breeds having ideal adult weight under nine pounds. There are four show classes for these rabbits: senior bucks, senior does, junior bucks and junior does.

Fryer - Young meat rabbit under five pounds.

G

Gestation - The period of time that a doe is pregnant (carries her young) from breeding to kindling (28–32 days).

H

Hindquarters - The rear section of the body containing the loin, hips, hind legs and rump.

Hip - The thigh joint and large muscular first joint of the hind leg.

Hock - The middle joint or section of the hind leg between the foot and hip.

Hutch - A human-built cage or rabbit home that gives protection to the animal.

K

Kindle - The process of giving birth to young rabbits. Also called kindling.

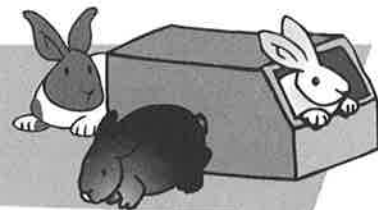
Kit - A baby rabbit under 16 ounces.

L

Litter - The young rabbits being raised by one doe.

Loin - The part of the back on either side of the spine and between the lower rib and hip joint.

Luster - Brightness and brilliance of fur.



M

Massive - Bulky and heavy; ponderous; large.

Mate - To breed.

N

Neck - The part of the animal that connects the head and body

Nest box - A kindling box inside or attached outside the hutch or cage where the kits are born and live for the first 18 to 21 days. Normally placed with the doe 28 days after she is bred.

Nursing - Kits suckling milk from their doe for nourishment.

O

Ovulation - The release of an egg (ovum) from an ovary.

P

Pad - The foot area in contact with the cage or hutch that protects the foot and hock

Pair - A male and female rabbit.

Palpate - To examine by feel or test for embryos to see if a doe is pregnant.

Pedigree - Written chart of the male and female ancestors of a rabbit. Shows the date of birth, ownership of dam and the parents, grandparents and great grandparents.

Penis - The male organ responsible for reproduction and urination.

Pregnant - A doe carrying young; a bred doe.

Processing - Process of harvesting the edible protein, or meat, of the rabbit.

R

Rabbitry - The area or building in which a group of hutches and rabbits are kept.

Registration - The process of making sure that a rabbit meets the qualifications established by the American Rabbit Breeders Association for that breed and has a three-generation pedigree. Requires examination by a licensed registrar or judge.

Reproduce - To have young.

Ribs - The curved parts of the side of the body immediately back of the shoulders and above the belly that protect the organs on the side.

Rump - The hind or rear parts of the back.

S

Saddle - The rounded, intermediate part of the back between shoulder and loin.

Sexing a rabbit - The process of determining if a rabbit is a doe or a buck.

Shoulder - The upper joint of the foreleg, connecting it with the body.

Sire - The male rabbit (buck) used for breeding.

Standard of Perfection - A book stating the characteristics of each recognized breed of rabbits as approved by a registering organization.

T

Tattoo - The permanent identification mark of a rabbit, which is placed in the left ear. The A.R.B.A. number goes in the right ear.

U

Uterus - The reproductive organ in the doe in which developing kits are carried and nourished before birth. Also called the womb.

V

Vulva - The external (outer) female sexual organ.

W

Weaning - The process by which young rabbits are removed from the doe to prevent nursing. A young rabbit is weaned when it is between four and eight weeks old, depending on breeding schedule and breed of rabbit.

Wool - Applied as descriptive of the fur of Angora rabbits; the guard hairs and under-fur being from two-and-a-half to four inches in length and resembling fine wool in texture.

