

# Management and Disease Prevention

## Designing a Rabbitry

Once your involvement in the rabbit project grows you may find yourself needing more space and even the need to design your own rabbitry. Just like when making other decisions there are many considerations such as style, cost and location that you must first decide.



**Rabbit Skill:**

**Life Skill:**

**Success Indicator:**

**Science Standard:**

Design a rabbitry.  
Making decisions  
Considers alternatives and outlines a rabbitry.  
Matter, energy and organization in living systems

## “Hop to it!”

First interview a local rabbit breeder or work with your adult helper to develop a list of factors to consider when designing your rabbitry. Write them in the space provided. Now show the design of your ideal rabbitry.

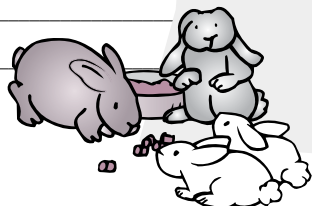
### Factors to Consider

1. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
2. \_\_\_\_\_
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3. \_\_\_\_\_
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5. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
6. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## My Ideal Rabbitry Design



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# Rabbit Rap

## Share What You Did

What factors did you consider? How did you design your rabbitry?

## Process What's Important

How did your design support the factors you listed?

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## Generalize to Your Life

What decisions did you make as you worked on your design? What influenced the decisions you made?

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## Apply What You Learned

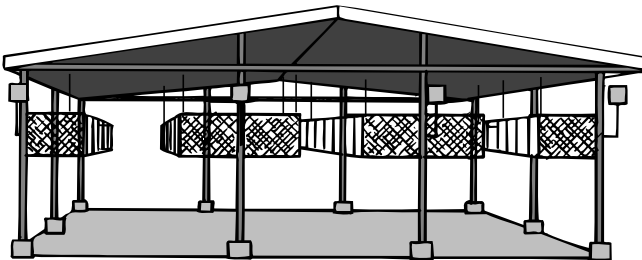
What would you need to do to actually build the rabbitry you designed?

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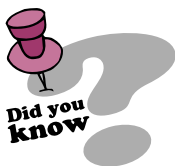
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Rabbitry with concrete floor and suspended cages.



*The welfare of an animal is everyone's concern. Making sure your rabbits have fresh water, plenty of good food, a clean cage, protection from predators and the weather and good medical care are parts of animal welfare.*

# Rabbit Facts

## Rabbitry Design Considerations

The final design will depend on your requirements. Your rabbitry may consist of a few odd hutches or a well-designed building or group of buildings with built in hutches. Here are some questions to consider.

**Location.** Will expansion be needed in the future? Will it be visible to neighbors?

**Indoor or Outdoor Hutches.** Is it important that stock be completely protected from the weather; coats will not be faded by strong sunlight; possibly reduce litters of young in winter; and protection from flying insects (inside hutches)? Or is it important that the coats be denser, initial building cost higher and better ventilation (outside hutches)?

**Storage.** Is there room and protection for feed, bedding and equipment? Is there a suitable bench or table?

**Arrangements.** Will hutches face each other or not? Will door be wide enough for wheeling supplies? Will hutches be slightly away from any wall?

**Lighting.** Will lighting be adequate? Have enough windows or roof lights been included that will be useful for ventilation purposes also? Will the window face north or east to reduce coat fade?

**Floor.** Will the floor be solid and easily cleaned, non-absorbent, non-slippery, durable and dry? Will the floor slope slightly to a gutter?

**Roof.** Will the roof provide some insulation against both cold and heat?

**Ventilation.** Will your design control temperatures, relative humidity and ventilation? Signs of inadequate ventilation are the smell of ammonia, condensation and too high a temperature or relative humidity compared to the outside air. Will ventilation outlets be high and inlets low? Will drafts be avoided?

**Cage Type.** Will all wire cages (hutches) be used or a combination of wire, galvanized welded wire mesh, metal and wood? Will the size be related to the breed being raised?

**Feeding and Watering.** Can this be done without opening the hutch door?

**Cleaning.** Can cages be cleaned and manure easily removed?

## Bounding Ahead

1. Develop a written plan for your rabbitry with answers to your considerations.
2. Build a rabbitry for your use or the use of someone else.
3. Give a presentation on designing a rabbitry to a rabbit group.

# The Rabbit's Digestive System

An understanding of your rabbit's digestive system will help you provide proper nutrition. Even though a rabbit is not a ruminant (like a cow), it can digest roughage (like a horse).

**Rabbit Skill:**

Learn parts and functions of rabbit digestive system

**Life Skill:**

Developing an inquiring mind

**Success Indicator:**

Correctly matches digestive system parts and functions

**Science Standard:**

Form and function

## “Hop to it!”

Label the parts of the digestive system and write the number of the function in the box by the correct part.

### Parts and Functions of the Digestive System

#### Parts

#### Functions

Esophagus

Stomach

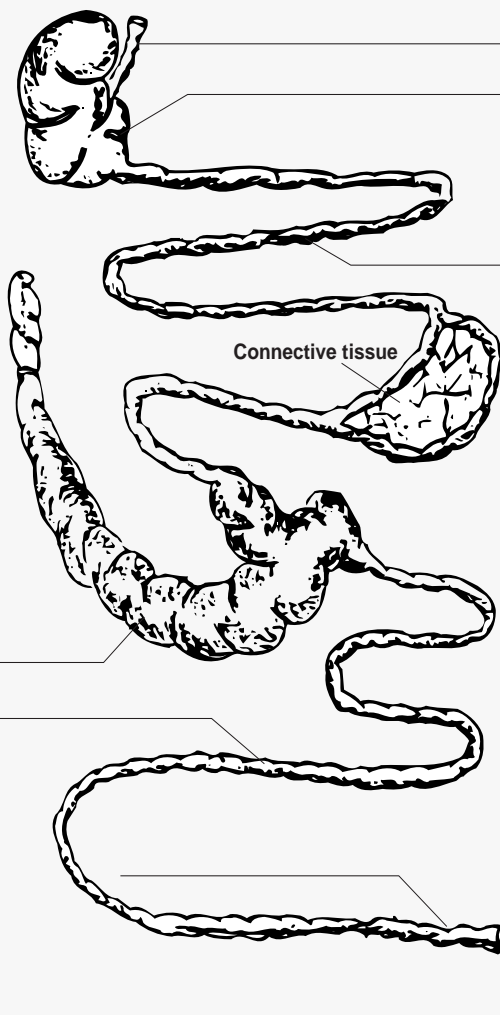
Small Intestine

Cecum

Large Intestine

Rectum

Anus



**1.** Emits fecal pellets

**2.** Digestion begins

**3.** Fecal pellets are stored

**4.** Tube for food passage from mouth to stomach

**5.** Holding area for bacterial digestion

**6.** Absorption of most food nutrients

**7.** Absorption of water and minerals

# Rabbit Rap

## Share What You Did

Which digestive parts were most difficult to identify? Why?

## Process What's Important

What are the major functions of the rabbit's digestive system? How is the rabbit's digestive system similar/different from other simple-stomached animals? How important is the cecum to the rabbit's digestive system?

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## Generalize to Your Life

What digestive parts do you have that are similar to a rabbit? How do you prefer to learn and relate parts to functions?

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## Apply What You Learned

How would you teach parts and functions to others? Why?

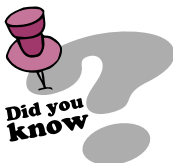
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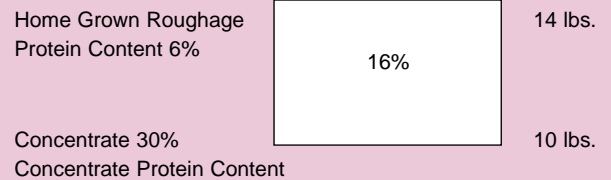
Stool eating coprophagy, is an essential part of rabbit nutrition. Soft stools are caught and eaten during night hours.

**Acknowledgment:** Adapted with permission from the Kansas Rabbit Leader Notebook.

# Rabbit Facts

## Balancing a Simple Ration

Rabbits can be used to make use of garden waste, roadside grass and weeds, lawn clippings, home food preparation by-products such as potato peels, etc. Rabbits can convert these "wastes" into a nutritious, white meat that can add variety to the family meat diet. These are satisfactory feeds for rabbits if one uses additional protein to balance them properly. Plant protein supplements such as: soybeans, peanuts, sesame, cottonseed and linseed meals in pea-sized cake, flake or pelleted form can be used with whole grain to make up the concentrate part of the ration. To figure out how much concentrate you need, the Pierson Square is a handy tool.



### Steps in using the Pierson Square:

1. Draw a square.
2. Write desired protein level of feed in the center.
3. Place in upper left, the protein content of the home-grown feed.
4. Place in lower left, the protein content of your concentrate.
5. Subtract diagonally the small number from the larger number.
6. Reading horizontally gives the pounds of each feed needed.

In the example above, you need to feed 14 pounds of home grown roughage to every 10 pounds of protein concentrate. In such diets, you will need to supply the rabbits with a salt source.

# Bounding Ahead

1. Invite a medical researcher to discuss how rabbits are used.
2. Preserve a rabbit's digestive system.

# Culling by the Numbers

Growth records of offspring are important. Rabbit breeders need to constantly cull rabbits that are not producing up to their potential. Records and Production Numbers will help you decide which rabbits to keep. Keeping records helps evaluate each doe and buck. It requires some extra time but it is well worth it.

**Rabbit Skill:**

Calculate doe production numbers.

**Life Skill:**

Decision making

**Success Indicator:**

Determines whether to keep or cull rabbits.

**Science Standard:**

Population growth

## “Hop to it!”

Calculate the Production Number for the doe and buck from records shown below. Then explain to a knowledgeable adult the process of calculating rabbit Production Numbers. Work with that same adult to develop a demonstration for your group describing the value of Production Numbers and how they help your plan to increase rabbit production.

### Example

A 26-month-old Californian doe was put into production at six months. She has produced 94 young in 12 litters. She has been bred 14 times.

What is her Production Number? \_\_\_\_\_

$$CA = (12 \text{ litter}/14 \text{ breedings}) \times 10 = 8.6$$

$$WA = (94 \text{ young}/12 \text{ litters}) = 7.8$$

$$YPA = [12 \text{ litters}/20 \text{ months in production } (26-6)] \times 12 = 7.2$$

$$PA = 3 \text{ since the doe is 26 months old}$$

The Production Number of this doe is:

$$\text{Production Number} = CA + WA + YPA + PA = 8.6 + 7.8 + 7.2 + 3 = 26.6$$

### Example

A 20-month-old White Satin buck entered the herd at six months. He has been involved in producing 120 young in 20 litters. He services 41 does.

Calculate the Production Number for this buck.

$$CA = (20 \text{ litters}/41 \text{ breedings}) \times 10 = 4.9$$

$$WA = (120 \text{ young}/20 \text{ litters}) = 6$$

$$PA = 2$$

$$\text{Production Number} = 12.9$$

**Photo**  
Record sheet on a computer screen

### Doe Breeding Record

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

### Buck Breeding Record

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

# Rabbit Rap

## Share What You Did

What was the most difficult portion of the production number to calculate? Why?

## Process What's Important

Why are Production Numbers an important part of deciding which rabbits to cull from the herd?

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## Generalize to Your Life

Why is it sometimes difficult to make decisions using only numbers?

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## Apply What You Learned

How will you use this method to cull your own herd?

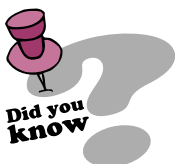
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*For matings, a doe should always be taken to the buck's cage rather than the other way around. Does are often possessive about their cages and could fight with or injure the visiting buck.*

# Rabbit Facts

## Litter Size

Does should average seven to eight young to be weaned from each litter in order to be kept in the commercial rabbitry. Does of fancy breeds will have smaller litters.

### Conception Average (CA):

CA = (number of litter/numbers of first breedings) x10

### Weaning Average (WA):

WA = (number of young produced/number of litters)

### Yearly Production Average (YPA):

YPA = (number of litters/number of months in production) x12

You will also need the **Productive Age (PA):**

6–12 months = 0

12–18 months = 1

18–24 months = 2

24–30 months = 3

more than 30 months = 4

Note: Ideal production number for does is 25.0 or higher. Ideal production number for bucks is 15.5 or higher.

# Bounding Ahead

1. Visit a commercial rabbitry to see how they use records to cull. Use this information in a separate short talk about how commercial rabbit growers use records in their businesses.
2. Develop or use a computer program to computerize the records of your herd.

# Dr. Jeckyl and Mr. Hare

Rabbit diseases can be treated and cured if detected early. You should get into the habit of checking your rabbits daily to detect any change in conditions. The slightest change may turn your calm and gentle rabbits into disoriented and sick rabbits. To detect these changes you will need to have good records of your rabbit's normal conditions.

**Rabbit Skill:**

Determine change in rabbit health by evaluating normal conditions.

**Life Skill:**

Problem solving

**Success Indicator:**

Tracks normal conditions of rabbit health and detects signs of illness.

**Science Standard:**

Personal health

## “Hop to it!”

Inspect a rabbit each of three days consecutively. Indicate on the chart the normal conditions for your rabbit over the three days.



Are your feet clean?

Rabbit Conditions	Day 1	Day 2	Day 3
Normal Breathing (steady, calm)			
Heart Rate			
Temperature			
Color of Mucous			
Texture of Coat			
Droppings (color, density)			
Feet (clean, no redness)			
Ears (straight, alert, clean)			



**Did you know**

The disease believed to cause the greatest loss of rabbits is coccidiosis.

Mice, rats, birds, flies, dogs and cats are the most common carriers of external parasites and bacteria that can infect a rabbitry.

# Rabbit Rap

## Share What You Did

What did you include on your chart?

## Process What's Important

Which is the easiest sign to note when your rabbit isn't feeling well? How does collecting data on a healthy rabbit help you to detect illness in a sick rabbit?

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## Generalize to Your Life

What signs would help you detect illness in one of your family members?

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## Apply What You Learned

How does collecting data help you make decisions?

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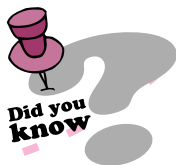


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Rabbit's ears help to cool the rabbit. When the weather is hot you can cool your rabbit by cooling the ears.

# Rabbit Facts



## Physiological and Biological Characteristics

Rectal temperature	.....	Average 103.1°F; range 100–104°F
Pulse rate	.....	150–300 beats per minute
Respiratory rate	.....	30–100 per minute
Lactation average uninterrupted length	.....	42 days
Lactation peaks at	.....	17–20 days
Litters number per doe per year	.....	2–10
Litter size	.....	2–14 young
Dental formula	.....	Upper Mandible ... 2 0 3 3
(Teeth sequence is incisors, cuspids, pre-molars, molars)		Lower Mandible ... 1 0 2 3
Usual life span	.....	3–10 years
Age of sexual maturity	.....	16–26 weeks
Gestation period (most common)	.....	31–32 days
Adult weight	.....	1–7.5 kg
Sex ratio average	.....	100 males to 105 females

# Bounding Ahead

1. Visit a doctor or veterinarian office. Interview a doctor/ veterinarian about how they determine illness in their patients. Create a pocket sized reference with your rabbit's normal conditions—so you can easily use it when checking your rabbits.