



R A B B I T S : From the Animal's Point of View I



What Does It Mean to Be a Rabbit?

Subject Overview and Background Information

Wild rabbits are found on every continent except Antarctica. The males are known as **bucks**, the females are called **does**, and their offspring are referred to as **kits**. Rabbits are born with no fur and with their eyes closed. They remain with the mother for approximately six weeks, until they have developed enough to live independently. Rabbits are nocturnal by nature and live in social groups. Many live in underground burrows (called **warrens**) dug by the does. Rabbits are **herbivores** and are **prey** to a variety of animals, including foxes, hawks, and humans.

Domesticated rabbits come in many breeds that vary in shape, size, and color. They usually live between six and eight years. All recognized domesticated rabbit breeds

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are descended from the wild European common rabbit. Cave paintings by early humans depict rabbits, and their domestication can be traced back to the Stone Age in the region of the world that is now Spain. The Romans bred rabbits for food, and by the fourteenth century French monks had begun to selectively breed them for specific traits. Today, rabbits are bred for food, research, fur, and skins, and as companion animals. Some products from rabbits, such as Angora wool, are becoming increasingly popular and have great commercial value.

Rabbits are territorial and survive predation in the wild by knowing their territory extremely well so they can use that knowledge to escape capture. If a predator approaches, a rabbit will either sit still to avoid being noticed or it will run away at speeds as fast as 18 miles per hour. A rabbit will also flash the white on its tail or thump one of its hind legs to warn other rabbits of danger. They have excellent hearing and a great sense of smell. The rabbit's nose is very sensitive and should not generally be touched. Rabbits even have their own unique body language. For example, if a rabbit is sniffing you, it means either that it is annoyed with you or that it is just "talking." When a rabbit licks you it means that it is grooming you, which is a sign of affection. If it is grinding its teeth softly, the rabbit is content. This is how a rabbit purrs! Because rabbits are social, domesticated rabbits do best when raised or adopted in pairs. Different breeds can be raised together, but make certain that the rabbits get along with one another. Adult males will fight with each other, so it is recommended that they not share the same housing. Additionally, raising unaltered males and females together will likely lead to mating.

• Concepts and Vocabulary

Camouflage, herbivore, kit, non-vocal communication, nose blinking, olfaction, predator, prey, warren

• Life Skills

Communication, problem solving, contributions to group effort, cooperation, decision making, keeping records, planning/organizing, sharing, teamwork

• Subject Links

Science, Language Arts.

• Overview of Activities

The activities introduce youth to rabbits, their way of life, and their behaviors. In the first activity, *A Young Rabbit's Adventure*, youth will learn about rabbits from a short story. After listening to the story, youth will review and discuss what they have learned about rabbits, including what rabbits eat and how they live. Youth will then try to draw different episodes from the story and retell the story in order, using their pictures.

The second activity, *How Would You React?*, teaches youth about communication and how humans and animals both have a variety of ways of communicating with one another. They will play a game similar to "Charades," but rabbit-style: Rabbits rely heavily on body language to communicate with one another, and youth will imitate this by trying to communicate different rabbit actions and reactions to other youth.

In the last activity, entitled *Use Your Nose to Find Friends and Foes*, youth will learn about **olfaction** and learn how rabbits are able to use their sense of smell to identify other rabbits, food, and even the presence of danger nearby. Youth will be given a certain scent and they will have to find a match for it using only their sense of smell.

References

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- House Rabbit Society. Interpreting body language and behavior. <http://www.rabbit.org/behavior/body-language.html>.
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Facts About Rabbits

— GENERAL INFORMATION —

- *Order:* Lagomorpha
- *Family:* Leporidae (hares and rabbits)
- Male rabbit is called a “buck;” female rabbit is called a “doe;” baby rabbits are called “kits.”
- Rabbits were first domesticated in Spain.
- All recognized domesticated rabbits breeds are descended from the wild European common rabbit.
- Wild and domesticated rabbits live on every continent except Antarctica.
- Rabbits are used for food, skins, research, and fur, and as companion animals.
- There are at least 45 distinct rabbit breeds.





Rabbits in the Wild

- *Coat characteristics:* Their coat is gray, with brown, black, or red scattered throughout the body. Their underside is light gray and the bottom of their tail is white.
- *Weight:* 3 to 5 pounds (1.5 to 2.5 kg)
- *Life span:* A shorter life span (about 1 to 2 years) than for domesticated rabbits, due to predation and other natural hazards.
- *Diet:* Rabbits are herbivores but are also opportunistic and will consume an omnivorous diet (e.g., fungi, plants, roots, tree bark, fruit, snails, and worms).
- Rabbits have well-developed hind legs that allow them to make long jumps. Dense fur on the hind legs makes it easier for rabbits to land while hopping, allowing them to cover long distances.
- *Habitat:* Wide variety of habitats, including thickets, forests, and meadows. Need cover for protection.
- A rabbit will generally occupy a few acres of land and know its territory very well.
- *Defense:* Knowledge of the area where they live; speed to escape predators.
- Keen sense of hearing. When a rabbit is not threatened, its ears are down and along its back. When disturbed, the ears stand straight up and the rabbit listens for possible danger.
- Rabbits are typically most active in the early morning and late evening.

Domesticated Rabbits

- *Physical characteristics:* Vary in length, fur type, coloration, and appearance.
- *Weight:* 2 to 20 pounds (0.9 to 9 kg)
- *Life span (in captivity):* 6 to 8 years
- *Diet (in captivity):* 4 ounces (113 g) of hay and 2 cups of fruits and vegetables every day.

Behavior

• Reproduction

- The doe builds an underground nest out of straw, vegetation, and fur that she pulls from her underside.
- *Litter size:* 4 to 8 kits
- Kits are blind and have little hair at birth.
- The doe will spend very little time feeding her young (1 to 2 times in a 24-hour period) so as not to reveal kits to predators.

• Social Hierarchy

- Rabbits are very sociable and live in colonies in large underground burrow systems (warrens).
- A colony has 6 to 10 adult males and females. The colony protects the warren from intruders.

- *Hierarchical structure:* The strongest male and female rule the colony.
- Both domesticated and wild rabbits are extremely territorial. They mark their territory with feces or urine and will display aggressive behavior to protect their territory.
- Rabbits love to chew! It is not only natural, but also necessary! If they do not chew, they can develop painful dental problems (malocclusion).
- Adolescent rabbits are very curious and active and they chew and dig a lot.
- Older rabbits are more sedate.

• Rabbit Communication

- *Begging:* Rabbits can learn quickly to beg for treats . . . especially sweets.
- *Chinning:* The rabbit's chin contains scent glands, so it rubs its chin on items to mark them as part of its territory.
- *Circling your feet:* Often associated with mating-related behaviors.
- *Don't touch my stuff:* A rabbit will often become distressed when you rearrange its cage as you clean. They are creatures of habit and seem to prefer to not have things rearranged.
- *Ears back:* Stressed
- *Ears forward:* Alert or alarmed
- *False pregnancy:* (Usually in unspayed females) a doe that is not pregnant may build a nest and pull hair from her chest and stomach to line the nest. She can even stop eating.
- *Grunts/growling/bark:* Alarmed or distressed
- *Head flat on floor:* Pet me now! This can also indicate fear if the entire body is lowered to the floor.
- *Kicking:* May be associated with trying to escape when being held.
- *Licking:* Grooming you. This indicates affection and bonding with you.



- *Playing:* Rabbits like to push or toss objects around. They can be very playful.
- *Shrill scream:* Injured or in pain.
- *Sniffing:* Investigating you or their environment.
- *Spraying:* Males that are not neutered will mark female rabbits as well as their territory with a urine spray. Females will also spray.
- *Teeth grinding:* Shows they are content, like a cat's purr, although loud grinding can indicate pain.
- *Territory droppings:* Droppings that are scattered rather than deposited in a pile indicate that the territory belongs to the rabbit. Rabbits often show this behavior upon entering a new environment.
- *Thump with back foot:* The rabbit perceives danger and is frightened or alarmed.
- *Whistle:* Some rabbits can whistle, indicating distress.

• Body Language

- Rabbits have poor vision up close, so they tilt their head to the side to help them see better in these situations.
- Rabbits will also stand up on their hind legs to get a better look at what's going on around them. They can be very curious.

References

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ACTIVITY 1



A Young Rabbit's Adventure

Background Information

A Young Rabbit's Adventure is a fictional story about a young rabbit in the wild that leaves its **warren** and experiences spring for the very first time. The story provides an introduction to wild rabbits, some of their behaviors, means of communicating with one another, and survival strategies. Domesticated rabbits are not too far removed from their wild ancestors, and learning about natural behaviors and characteristics of rabbits living in nature is valuable for youth.

• Time Required

30 to 50 minutes

• Concepts and Vocabulary

- **Camouflage.** To alter the appearance of something to prevent detection. The ability to blend with the surrounding environment to prevent detection.
- **Herbivore.** An animal that feeds on plants. Examples include rabbits, sheep, and horses.
- **Kit.** A young rabbit.
- **Predator.** An animal that eats other animals in order to live and survive.
- **Prey.** An animal that is considered food by another animal.
- **Warren.** A system of tunnels that rabbits use for shelter and protection.

• Life Skills

Communication, contributions to group effort, cooperation, decision making, planning/organizing, sharing, teamwork

• Subject Links

Science, Language Arts

• State Content Standards Supported

Science

- Third Grade
 - » *Investigation and Experimentation: 6c, 6d*
 - » *Life Sciences: 3a*

Language Arts

- Third Grade
 - » *Reading Comprehension: 2.3*
 - » *Listening and Speaking Strategies: 1.1, 1.3 1.5*
- Fourth Grade
 - » *Writing Applications: 2.4*
 - » *Listening and Speaking Strategies: 1.2*
- Fifth Grade
 - » *Reading Comprehension: 2.3*
 - » *Speaking Applications: 2.3a*

• Suggested Grouping

Pairs or small groups of 3 to 5

• Materials Needed

(* = *Materials provided in curriculum*)

- * Story called *A Young Rabbit's Adventure* (one copy for each pair/small group)
- * Picture of Rabbit Warren (one copy for each pair/small group)
- * Story Scenarios
- Small paper bag
- Drawing paper
- Crayons, colored pencils, or markers
- Flip chart paper

• Getting Ready

- Cut the *Story Scenarios* into separate slips and place them in a small paper bag.
- Divide the youth into pairs or small groups of 3 to 5.
- Make sure each group gets enough flip chart paper.
- Make sure each group gets enough drawing paper and pens or other drawing instruments for the Concept Application.

Opening Questions

1. **What do you know or wonder about where rabbits live?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What do you know or wonder about what rabbits eat?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What are some different things you know or wonder about the ways rabbits behave?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

1. Provide each pair/small group with a copy of *A Young Rabbit's Adventure*.
2. Ask the participants to read it carefully and make notes.
 - » **Note:** *One member of each pair/small group may choose to read the story to the other youth in the pair/small group or each youth may read the story quietly to himself or herself.*

Key points to look for include (a) where the rabbits live, (b) the rabbits' behavior, (c) communication strategies, (d) what rabbits eat, and (e) things the rabbits do that help them survive in the wild.

3. Ask the youth to share their ideas verbally or draw or write their ideas on the flip chart paper provided.

Sharing, Processing, and Generalizing

Once the youth have finished reading the story and recording their notes, discuss the questions below:

1. **What are some of the things you learned about where wild rabbits live? About their behavior? How do they communicate? What do wild rabbits eat? What are some things that help wild rabbits survive in nature?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What do you know or wonder about how wild rabbits differ from domesticated rabbits? Compare your ideas with your notes from the story *A Young Rabbit's Adventure*.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **Provide each pair/small group with a copy of the picture of a rabbit warren provided just after the story. Ask: How is this similar**



to or different from their own home, or an apartment building or hotel? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Concept and Term Discovery/ Introduction

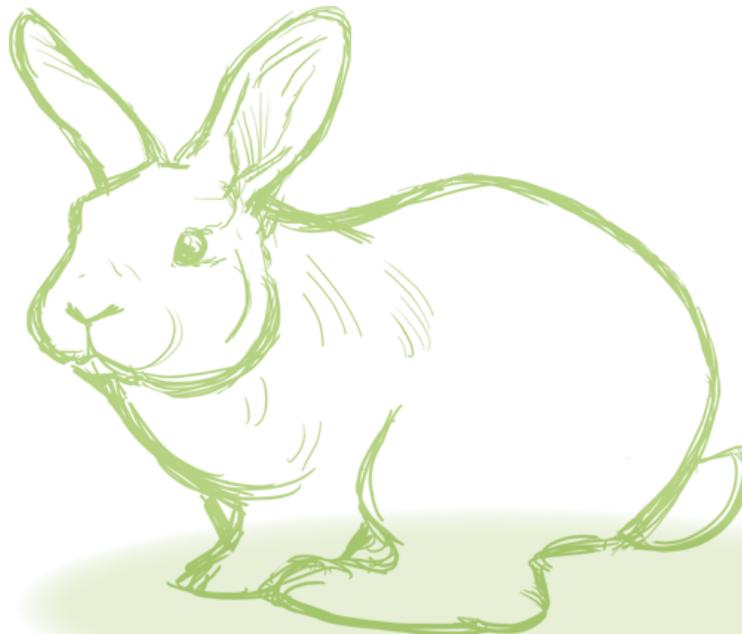
At this point, volunteers need to ensure that the terms **camouflage, herbivore, warren, kit, predator, and prey** have been discovered by or introduced to the youth. (**Note:** The goal is to have the youth discover terms and concepts on their own, defining them with their own words. The picture of the rabbit warren may help with this process.)

Concept Application

1. Have the youth continue to work in pairs or small groups.
2. Have a representative from each group pick one *Story Scenario* from the small paper bag.
3. On each slip of paper is a scenario from the story. Each group must work together to come up with a drawing that portrays the scenario they have from the story. Allow them approximately 10 minutes to complete their drawings.
4. After 10 minutes, have each group share their scenario and describe their drawing.
5. Once every group has shared, have the entire group place the drawings in chronological order, do a final “picture walk” through the story, and discuss the story.

References

Gibbons, Gail. 2000. Rabbits, rabbits, and more rabbits! Holiday House: New York.



A Young Rabbit's Adventure



After a cold, hard winter that lasted an unusually long time, a young rabbit and his family emerged from their warren and were exploring a field full of flowers on a warm spring day. The adults of the colony were moving about freely and the kits were acting in a playful manner as they experienced spring for the very first time.

Of the seven kits born in his litter, this young rabbit was the smallest. Often referred to as a runt, he had some difficulty competing with his brothers and sisters for food, but he managed to make it through the winter and he was now out and about feeding on the fresh plant roots along with everyone else.

On the third consecutive day of warm weather, the young rabbit was hopping through the field with his brothers and sisters when he noticed that his mother and father turned their heads in one direction and pointed their ears forward suddenly. His father then stood up on his hind legs and looked around, after which he began thumping his back foot hard and fast on the ground. This got everyone's attention! All of the other rabbits' ears folded back on their heads and they began sprinting toward the

holes that opened into their warren where their burrows were located. Close behind them was a family of foxes, one of many predators of rabbits.

Because of their speed and agility, most of the rabbits made it safely to their warren, with the foxes arriving just a few seconds later. Those that did not make it underground, including the young runt, sat perfectly still in the tall grass, their tan and white coats blending with the brush and providing excellent camouflage. Fortunately for them, the foxes had focused their efforts on trying to dig into the burrows with their paws, but because the ground was so hard they soon gave up and left.

Slowly, the rabbits emerged from hiding with their noses in the air, sniffing for the scent of their predators. When they were sure the foxes were gone, they returned to their activities. The young rabbit and some of his family members resumed foraging, searching for the sweet young shoots of flowers and grasses. Others relaxed together, nuzzling noses and grooming one another's fur, and some continued to dig the burrows of the warren that would shelter and protect them all year long.



Rabbit Warren



Story Scenarios



Print one-sided and cut out along dashed lines.



Rabbits peeking out of the burrows for the first time this spring

Young rabbit's father communicating danger

The rabbit family grazing in the field

Rabbits running away from the foxes toward their warren

Young rabbit's mother and father alert, hearing a sound

Rabbits camouflaged in the grass

Rabbits emerging from hiding and sniffing the air for the scent of predators

ACTIVITY 2



How Would You React?

Background Information

We all know how frustrating it is when we are unable to understand or be understood by others. It is especially important to be able to communicate with those who share our living space. For those of us who own rabbits or other animals as pets, this means we should try to understand them as well as possible. Rabbits may be quiet by nature, but they have many ways of communicating their needs. Rabbit communication consists of a unique body language, as well as some sounds that are barely audible (so quiet that they are very hard to hear).

• Time Required

30 to 40 minutes

• Concepts and Vocabulary

- **Non-vocal communication.** The passing of information to organisms through means other than the production of sound (e.g., body movement).

• Life Skills

Planning/organizing, problem solving, teamwork, contributions to group effort, sharing, cooperation

• Subject Links

Language Arts

• State Content Standards Supported

Language Arts

- Third Grade:
 - » *Listening and Speaking Strategies: 1.1, 1.3*
- Fourth Grade:
 - » *Listening and Speaking Strategies: 1.1*
- Fifth Grade:
 - » *Listening and Speaking Strategies: 1.2, 1.6*

• Suggested Grouping

Pairs or groups of three

• Materials Needed

(* = *Materials provided in curriculum*)

- * List of “Rabbit Reactions”
- * Rabbit Observation Sheet (Concept Application)
- 2 small paper bags or other non-transparent containers
- Clock with a second hand
- Markers or other writing instruments (shared materials)
- Scissors
- Flip chart paper (one piece per group)

• Getting Ready

- Make sure there are enough markers/writing instruments and flip chart paper sheets for each group.
- Cut the list of “Rabbit Reactions” into individual strips, fold them, and place them in a paper bag or bowl.
- Make enough *Rabbit Observations Sheets* so each youth can have one.

Opening Questions

1. **What are some ways that you communicate with other people?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **How do you think animals communicate with others of the same species? What about communicating with animals of a different species? How is this similar to or different from the ways humans communicate?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

3. What if you were unable to speak or write? What are some ways that you could communicate your feelings in the following situations?

- » *When you are scared or angry.*
- » *When you want attention.*
- » *When you are upset.*
- » *When you are happy.*

Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

1. Begin by explaining to the youth that rabbits do not have the option of writing when they communicate and are very limited in their vocal communication. Therefore, they rely heavily on the use of body language to communicate.
2. Explain that the game they are going to play is like “Charades,” only it will be “Charades: Rabbit Style.” The rules to the game are as follows:
 - » *Have each pair or small group choose a Rabbit Reaction from the paper strips in the bowl or bag. The group should not tell the other groups what their Rabbit Reaction is.*
 - » *Allow each pair or small group two or three minutes to plan a skit. One individual from each group may act the skit out, or all members of each team may be involved in acting it out. **Note:** Remind the groups that their skit must use body language only; the “actors” may not use their voices.*
 - » *Take turns and ask each pair or small group to perform their skit. At the completion of each skit, have the other groups record on their flip chart paper what they observed (e.g., the body language) and what message (e.g., happy, scared, angry) they think the actors were trying to communicate.*
3. Continue the game until everyone has had a chance to be “on stage.”

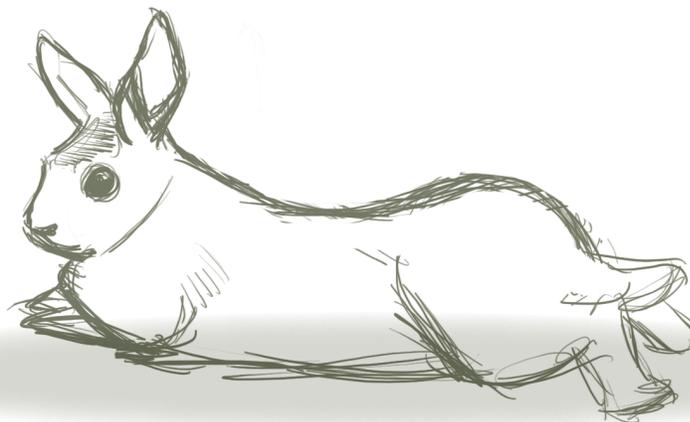
Sharing, Processing, and Generalizing

After the activity, talk with the youth about their general thoughts, observations, and questions. Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. **Can you think of reasons why a wild rabbit would have to communicate the different feelings that were illustrated or portrayed? What about domesticated rabbits?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **Can you think of any other challenges that rabbits would have when trying to communicate with humans?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What do you think are some important reasons for humans to learn more about how rabbits communicate?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Concept and Term Discovery/Introduction

At this point, volunteers need to ensure that the concept/term of **non-vocal communication** has been introduced or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their exploration and define terms using their own words.)



Concept Application

Spending time observing your rabbit(s) is a good way to learn more about their behavior.

1. If you have a rabbit at home, spend at least 10 minutes each day for a period of at least one week observing your rabbit. Record your observations on the *Rabbit Observation Sheet*. If you do not have a rabbit at home, you can observe another animal.
2. Try the following to see how your rabbit (or other pet) behaves.
 - » Give your rabbit a new toy (make sure it is a safe toy that is specifically designed for your pet).
 - » Observe your animal while it is eating.
 - » Observe your animal after it eats.
 - » Observe your animal in any additional situations that it might experience in its daily life.
3. Observe an animal in different situations. For example, when your animal is given a new toy, is it

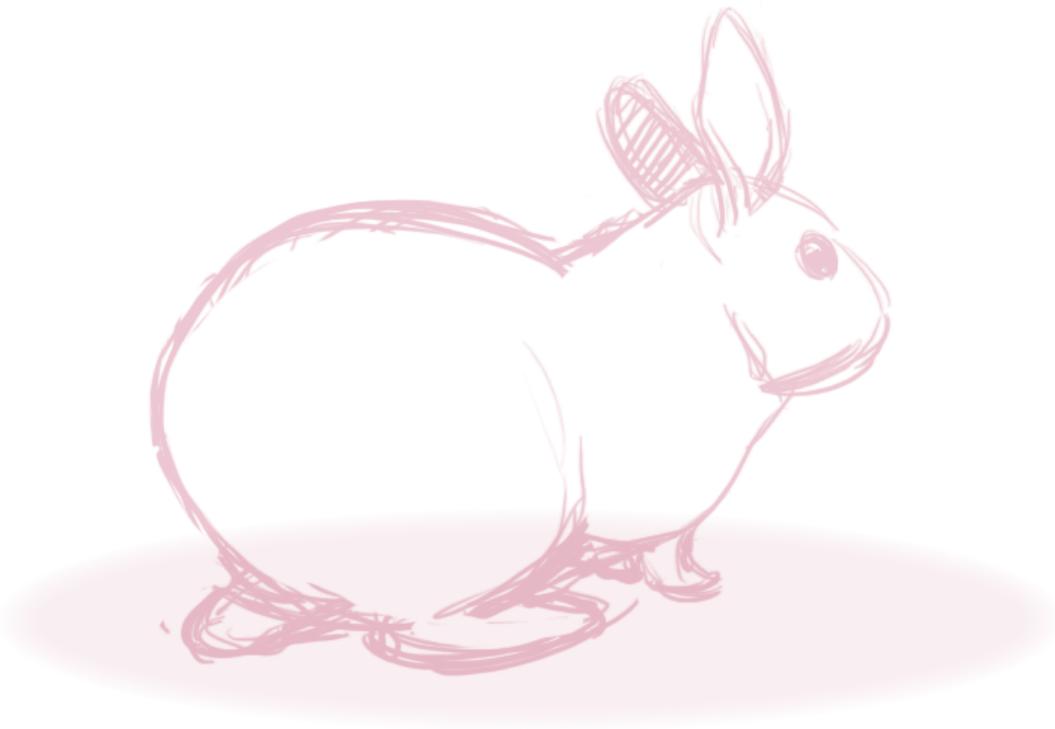
curious about the toy? Does it show signs of fear, happiness, or contentment? If you notice that it seems fearful, make sure to remove the toy so you do not cause them to become stressed.

4. You can do additional research at the library or on the Internet to learn different ways that the animal communicates through its behavior.

By carefully observing an animal, you can learn to interpret its behaviors and understand its feelings.

References

- Harriman, Marinell. 2005. House rabbit handbook: How to live with an urban rabbit. Alameda, CA: Drolley Press.
- Andrews, Connie. 2009. Rabbit anatomy. HopperHome.com. <http://www.hopperhome.com/hopperhome-anatomy.htm>.
- The Language of Lagomorphs: What your rabbit is saying and how to speak back. Rabbitspeak.com. <http://language.rabbitspeak.com/>



List of Rabbit Reactions



Print one-sided and cut out along dashed lines.



**Thumping back feet:
frightened or alarmed**

Kicking: stressed

**Pushing ears forward:
alert or alarmed**

Lying on side or back: content

**Rubbing chin on objects in room:
marking territory**

Stretched out flat: content

Pulling ears back: stressed

Licking: affection and bonding

Rabbit Observation Sheet

Instructions: Sit quietly with your rabbit(s) while either in the home environment (cage, hutch, etc.) or in a safe location outside of the cage. Spend about 10 minutes watching your rabbit(s) and write down your observations of behavior. Don't interact with your rabbit(s) during this time, simply observe and see what they do their own. Some sample behaviors to look for are listed below along with space where you can record your notes.

ACTIVITY: Notice how active your rabbit is today. Does he/she sit quietly? Is he/she playful? Does he/she move a lot or a little? How does he/she move?

INVESTIGATION: What objects does your rabbit show interest in? What does he/she do when he/she approaches an object? Describe your rabbit's interactions with objects.

SOCIAL BEHAVIOR: If you have more than one rabbit, how do they interact? Describe their behaviors such as grooming, nuzzling, resting together, etc.

OTHER: Any other interesting behaviors you may observe. If you have any questions about your rabbit's behavior note them here so you can discuss them with your adult volunteer.

ACTIVITY 3



Use Your Nose to Find Friends and Foes

Background Information

Rabbit **olfaction** (their sense of smell) is far more sensitive than that of humans. Rabbits have millions of scent cells in their noses that allow them to detect a variety of odors that humans cannot. Rabbits use their sense of smell to identify other rabbits and animals. They also use their sense of smell to help them locate food and to alert them if danger is near.

Rabbits are able to use their sense of smell when they are just born. They need it to find their mother's teats to drink milk. When they are identifying a scent, rabbits usually shift their nose up and down, a process called **nose blinking**. Because their nose is very sensitive to certain odors such as perfumes, chemicals, and dust, inhalation of these scents may cause them upper respiratory problems.

• Time Required

20 minutes

• Concepts and Vocabulary

- **Control.** In an experiment, the subjects who receive the treatment are referred to as the *experimental group*; the subjects who do not receive the treatment are called the *control group*.
- **Nose blinking.** A gesture rabbits make when sniffing their surroundings. The rabbit moves its nose up and down to smell things.
- **Olfaction.** The act of smelling something; the sense of smell.

• Life Skills

Cooperation, keeping records, problem solving, sharing

• Subject Links

Science, Language Arts

• State Content Standards Supported

Science

- Third Grade:
 - » *Investigation and Experimentation: 5e*
- Fourth Grade:
 - » *Investigation and Experimentation: 6d*

Language Arts

- Third Grade:
 - » *Writing Applications: 2.2*
 - » *Listening and Speaking Strategies: 1.3*
- Fourth Grade:
 - » *Listening and Speaking Strategies: 1.1*
- Fifth Grade:
 - » *Listening and Speaking Strategies: 1.1*

• Suggested Grouping

Pairs or small groups

• Materials Needed

(* = *Materials provided with curriculum*)

- * At least 2 sets of 10 Rabbit Cards
- 20 cotton balls
- 10 different scents (extracts, perfumes, aromatherapy oils, etc.)
- 20 film canisters (the capped plastic containers from 35mm camera film) or similar small containers
- Index cards
- Flip chart paper (one sheet per group)
- Writing instruments/markers
- Scissors
- Tape

• Getting Ready

Acquiring different scents:

- Here are some suggestions for how to get scents easily and at low costs. Instead of going out of your way and buying scents (some can be pretty costly), try using:
 - » *juices*
 - » *garlic*
 - » *potent-smelling herbs*
 - » *other foods/products that have distinctive aromas*

Preparing the control film canisters:

- Designate 10 canisters to be the controls.
- Take 10 cotton balls and apply a different scent to each one. Make sure you keep track which scent you apply to which cotton ball.
- Place each cotton ball into a separate film canister.
- Take one set of 10 *Rabbit Cards*, cut them out and tape one to the bottom of each canister. Tape them so they will be facedown when you set down the canisters, so no one will be able to see the pictures.
 - » **Volunteer tip:** *Make a list of which scents match which rabbit photo.*
- Place the control canisters, tops off, on a table with index cards labeled from 1 to 10. Place the numbered cards in front of the canisters.

Preparing the canisters for the youth:

- Now take another 10 cotton balls, apply a different one of your 10 scents to each one, and place each in a different film canister.
 - » **Volunteer tip:** *You might want to cap the canisters when not in use so the scents will remain strong throughout the activity.*
- “Hide” these open canisters (i.e., they should not be too conspicuous) so the youth will have to search for them. If possible, do this activity outside in an open area so the youth, seeking the scents as “rabbits,” will have room to roam. If you do this activity indoors, place the canisters in different parts of a large room.

Opening Questions

1. **What are different methods humans use to distinguish one person from another?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **Which senses do you think are the most involved in making these distinctions? Why do you think that is so?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **Explain what you know about how animals distinguish between individuals of their own kind as well as other species.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

1. Provide each pair or group with one *control canister*. Have them remove the cap and smell the contents without looking inside. Additionally, have them look at the rabbit picture taped to the bottom of the canister. This is “who” the members of that pair or group are for this activity.
2. Have them return the control canisters to the activity volunteer.
 - » **Note:** *They cannot re-check the control canister until they have found its matching, hidden canister.)*
3. The pairs or groups then search for their matching canister. Once they find a canister, they should remove the cap and smell the contents without looking inside. After each member of the pair or group has smelled the contents, have them place the cap back on the container and return it to where they found it. (**Note:** Encourage them to smell the contents of as many different canisters as possible.)
4. Once a pair or group finds “their” scent, they may return to the control canisters to check whether their sense of smell was accurate. If they found the correct scent, they have completed the Experiencing phase of this activity; if not, they have to return the canister and continue searching.

Sharing, Processing, and Generalizing

Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. **What made it challenging to tell the different scents apart? How many tries did it take you to find the correct scent?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
 2. **Why do you think rabbits use scent to identify each other? What does this tell you about the rabbit?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
 3. **Can you think of any other animals that mostly use smell to tell each other apart?** Ask the youth to make a list and share their ideas verbally or write their thoughts and ideas on the paper provided.
 4. **In what situations do you use your sense of smell to gather information?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
- » **Volunteer Tip:** *At this point, if the youth are curious as to what their scent was, this would be a good time to discuss their guesses and reveal what the actual scents are.*

Concept and Term Discovery/Introduction

At this point, volunteers need to ensure that the concepts and terms **olfaction** and **nose blinking** have been introduced or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their own exploration and define terms using their own words.)

Concept Application

1. Observe a rabbit using its sense of smell in its enclosure or moving around your house. If you have a dog as a pet, observe the dog's olfactory behavior when you take it on a walk. Record your observations for 10 minutes per day for one week.
2. Try putting your pet's food out in a room, but out of its direct sight. Observe your pet's behavior and record what you see.

References

- The American Rabbit Breeders Association, Inc. Breeds of rabbits and cavies. Arba.net. <http://www.arba.net/Breeds.htm>.
- Metroulas, April. Rabbit senses: What is it like in their world? PetPlace.com. <http://petplace.netscape.com/articles/artShow.asp?artID=3852>.
- The Teacher Webshef. 1998. Classroom animals and pets: Mammals – Rabbits. Teacherwebshef.com. <http://www.teacherwebshef.com/classroompets/mammals-rabbits.htm>.



Rabbit Cards



Print one-sided and cut out along dashed lines.



Silver Fox



Swiss Fox



Belgian Hare



American Sable





Print one-sided and cut out along dashed lines.



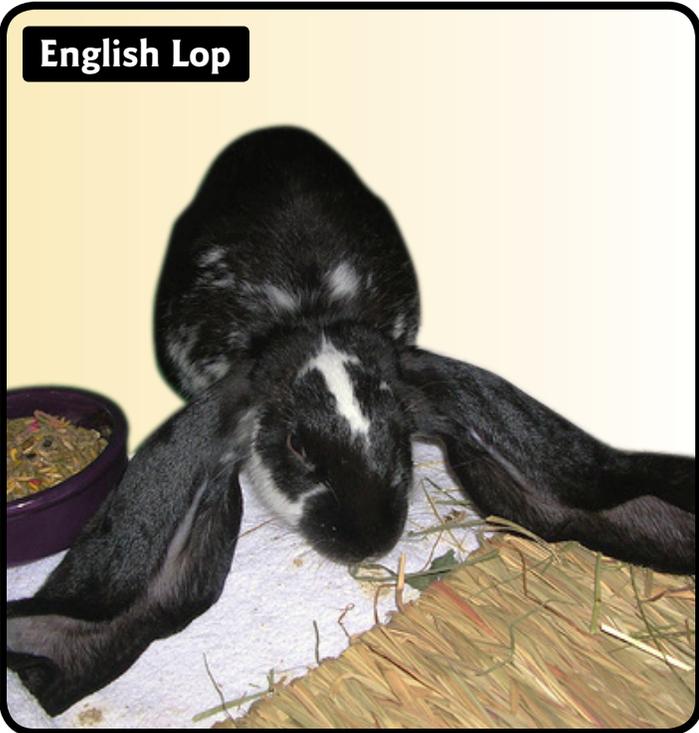
American Fuzzy Lop



Britannia Petite



English Lop



Giant Angora





Print one-sided and cut out along dashed lines.



Jersey Wooly



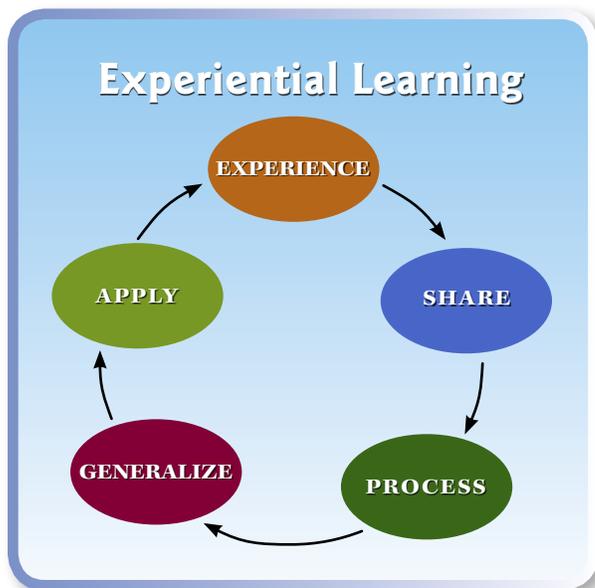
Rex



APPENDIX

The activities in this curriculum were designed around inquiry and experiential learning. Inquiry is a learner-centered approach in which individuals are problem solvers investigating questions through active engagement, observing and manipulating objects and phenomena, and acquiring or discovering knowledge. Experiential learning (EL) is a foundational educational strategy used in 4-H. In it, the learner has an experience phase of engagement in an activity, a reflection phase in which observations and reactions are shared and discussed, and an application phase in which new knowledge and skills are applied to a real-life setting. In 4-H, an EL model that uses a five-step learning cycle is most commonly used. These five steps—Experiencing, Sharing, Processing, Generalizing, and Application—are part of a recurring process that helps build learner understanding over time.

For more information on inquiry, EL, and the five-step learning cycle, please visit the University of California Science, Technology, and Environmental Literacy Workgroup's Experiential Learning Web site, <http://www.experientiallearning.ucdavis.edu/>.



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R A B B I T S : From the Animal's Point of View **2**



Rabbit Housing: Designing a Rabbit Habitat

Subject Overview and Background Information

This unit is designed for youth who are interested in learning more about keeping rabbits. Care for rabbits requires a great deal of time and effort, and if a youth can understand the responsibility and considerations required, he or she will be better prepared to care for and ensure the welfare of a rabbit.

Design of a rabbit habitat can be relatively uncomplicated with proper planning. There are a few basic necessities such as a cage or hutch, a food bowl, bedding, a water bottle, and chew toys. The habitat need not be limited to a cage, however: it can incorporate an entire house! It is best for the rabbits if they have freedom around the house, but the house must be “bunny-proofed” beforehand. Additionally, rabbits can be let outside, but only in the daytime in a secure yard.

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Warm temperatures are a threat to a rabbit's health. Rabbits can suffer from heat stress if the temperature rises above 85°F. A shady, well-ventilated shelter, hutch, or cage for the rabbit is important. Additionally, an ice pack (or a plastic bottle filled with water and then frozen) in the rabbit's cage can help keep temperatures down.

Rabbits are social animals and are best housed in pairs or small groups. Unless the rabbits are to be used for breeding purposes, they should be spayed or neutered. Well-mannered dogs and cats can live peacefully with the rabbits, but suitability should only be determined on a case-by-case basis.

By the end of this unit, youth should understand that a rabbit's housing needs are much like their own, and that cost will certainly be a factor in determining how they will design and furnish a home for their rabbits.

• Concepts

Environmental needs of humans and rabbits

• Life Skills

Communication, decision making, empathy, keeping records, organizing, planning/organizing, teamwork, wise use of resources

• Subject Links

Science, Language Arts, Math

• Overview of Activities

All animals have similar needs, such as food, water, shelter, and space. As a lead-in to discovering the needs of rabbits, the first activity will help youth discover what their own needs are by thinking about their homes and exploring what they themselves need to live. Then they will use this information as a reference to help them decide what they think rabbits might need.

In the next activity, the youth will determine a reasonable budget to cover the cost of the items they will need to establish a home for rabbits. They will then go on an imaginary shopping trip for the items they need to build and furnish their rabbits' home, making purchase decisions based upon their budget.

The environmental needs of rabbits do not remain constant; they change depending on the situation or the location of the animal. The youth will be given various scenarios that will require them to adjust their rabbits' environment.

References

- Harriman, Marinell. 2005. House rabbit handbook: How to live with an urban rabbit. Alameda, CA: Drolley Press.
- Rabbit Haven. Housing. Rabbithaven.org. <http://www.rabbithaven.org/Q&A/housing.htm>.



Facts About Rabbits



RABBIT HOUSING

When selecting or designing housing for rabbits, it is important to keep their natural behaviors in mind. Ideally, all housing for rabbits should allow for social interaction and provide opportunities for digging, playing, and hiding, as well as proper protection from extremes in weather and potential predators.

• Social Groupings

Because rabbits in the wild are highly social, it is important to house pet or farm rabbits in compatible social groups. Social housing can benefit the rabbits by giving them an opportunity to express their social behavior and making them less susceptible to stress. However, you must take care to select the proper social groupings.

Female rabbits generally get along well in groups as do juveniles of both sexes. Adult males (12 to 14 weeks or older) will fight with other adult males if housed together. Housing adult males and females together will likely lead to breeding, so if young rabbits are not desired, you need to house opposite sex adults separately. When housing

adult males, it is important to keep the singly housed male rabbits in a place where they can see, hear and smell other rabbits in order to avoid total social isolation.

Rabbits, like all social animals, develop domination-subordination relationships within their social groups. If the social group is changed by removal or replacement of an adult group member, these relationships may be disrupted and fighting may result. For this reason, it is important that you avoid changing social groupings as much as possible. Group sizes of four to eight adult female rabbits work well if the groups are to remain together for an extended period of time. Larger groups of juvenile rabbits may be maintained for short periods of time. It is a good idea to establish a new group with young animals who have not yet reached

puberty. Group members should be of the same age and sex, but it is not necessary that they be littermates.

• Enclosure Size

The primary enclosure of a rabbit group needs to be large enough to allow three hops in one direction. This distance will vary between breeds: for a fully grown New Zealand white rabbit, the enclosure should measure at least 6.5 feet in one direction. If more than two adult rabbits weighing 8 to 14 lb are housed together, the minimum floor area of the primary enclosure should be 6.5 square feet for up to four animals, increasing by 1.5 square feet for each additional adult rabbit. The sides of the pen should be no less than 4 feet tall to prevent the rabbits from leaping out. If you use a wire mesh cover to keep the animals in, it must be at least 2.5 feet above the floor so adult rabbits will be able to sit in the lookout posture.

A good solution is to create a rabbit enclosure that has both a hutch and a run. The hutch provides a safe, secure area where the rabbit can hide and nest and offers protection from weather. The attached run provides space necessary for exercise, exploration, and play.

• Enclosure Furnishings

Rabbit behavior in the wild includes digging, hiding, foraging, and nest building, all of which should be accommodated in their enclosure. To facilitate digging behavior, you can provide an area of woodchip litter (but not cedar or pine), shredded paper, or straw that is large enough and deep enough for the rabbits to explore. In addition, you should provide another safe place for the animals to hide. This can be accomplished by placing a section of 18-inch PVC piping, a cardboard box, or some other semi-enclosed structure in with the rabbits. There should be enough hiding spaces available to accommodate all of the rabbits in the pen.

Foraging is the work rabbits perform to access food. You can encourage this behavior by providing rabbits with a good supply of high-quality hay. If you place the hay on the wire mesh cage top, the rabbits will have to work to pull the hay down into the cage. Hay can also serve as a nesting material.

Rabbits should be provided with toys such as balls, chewing sticks, and objects that they can manipulate and move around the cage. This promotes play and exploration.

Cages should be designed in a way that provides the rabbits with a solid floor area in addition to grid or wire flooring. Wire flooring is uncomfortable for the animals and very often results in sore hocks; additionally, cecotropes, a type of solid dropping produced by the rabbit's digestive system and then consumed by the rabbit for its nutritional value, may fall through the mesh and be unavailable to the rabbit. In larger pens, part of the solid floor area can be raised (like shelves). The shelves (with ramps for access) give the rabbits variety in their vantage point and provide safe places for resting.

References

Some of the information in this section was drawn from the following article:

Boers, K., G. Gray, J. Love, Z. Mahmutovic, S. McCormick, N. Turcotte, and Y. Zhang. 2002. Comfortable quarters for rabbits in research institutions. Pp. 44–50 in V. Reinhardt and A. Reinhardt (eds.), *Comfortable quarters for laboratory animals*, 9th edition. Washington, DC: Animal Welfare Institute. <http://www.awionline.org/pubs/cq02/Cq-rabbits.html>.



ACTIVITY 1



My Home, a Rabbit's Home

Background Information

There are certain things in our environment that we either need or want. Some things are essential, such as food, water, and shelter, and without these things we cannot survive. There are other things that we do not need to live but that enrich our lives, such as books, music, and play structures. Comparing humans and rabbits, we can see that there are many similarities and differences in their environments relative to what is essential and what is not.

• Time Required

40 minutes

• Concepts

Environmental needs of humans and rabbits

• Life Skills

Communication, decision making, empathy, organizing

• Subject Links

Science, Language Arts

• State Content Standards

Science

- Sixth Grade:
 - » *Investigation and Experimentation -7d*

Language Arts

- Third Grade:
 - » *Listening and Speaking Strategies -1.5*
- Fourth Grade:
 - » *Listening and Speaking Strategies -1.1, 1.8, 2.2b*
- Fifth Grade:
 - » *Listening and Speaking Strategies -1.5*

• Suggested Grouping

- Groups of 3 to 4

• Materials Needed for Each Group

- Flip chart paper
- Writing implements (pencils, pens, markers)

• Getting Ready

- Divide the youths into the desired group size.
- Distribute the materials.

Opening Questions

1. **Think about where you live. What are some things that you need in your home in order to survive?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What are some things in your home that improve the quality of your life?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What are some things in your home that are really important to you? Why are these your favorite things?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Part I: Procedure (Experiencing)

1. Ask the youth to work together to make a list of things they need in their homes, including all the things that they need to have in their houses or community in order to live safely and comfortably and to be healthy.

2. Then have the youth organize these items into categories:
 - » *Social needs (friends, family, teachers, etc.)*
 - » *Physical needs (shelter, safety, health, comfort, etc.)*
 - » *Behavioral needs (toys, activities, exercise, etc.)*
 - » *Other needs*

Part I: Sharing, Processing, and Generalizing

Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

- **Ask each group to share their list and explain what they have described as their needs and how they chose to categorize those needs.** Are there similarities between the groups' lists? Differences? Have the youth explore possible reasons behind those differences.

Part II: Procedure (Experiencing)

1. On another sheet of flip chart paper, have the youth list all the things they think a rabbit needs to live safely and comfortably and to be healthy.
 - » **Volunteer Note:** *Remind them to think of their own needs as part of this exercise.*
2. Then have the youth organize these items into categories:
 - » *Social needs (friends, family, teachers, etc.)*
 - » *Physical needs (shelter, safety, health, comfort, etc.)*
 - » *Behavioral needs (toys, activities, exercise, etc.)*
 - » *Other needs*

Part II: Sharing, Processing, and Generalizing

Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth;

if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include:

1. **Ask each group to share their list, explaining what they have described as a rabbit's needs and how they chose to categorize these needs.** Are there similarities between the groups' lists? Differences? Have the youth explore possible reasons behind those differences.
2. **Have the groups compare and contrast their lists of human needs and their lists of rabbit needs.** Discuss how the needs of humans are similar to or different from the needs of rabbits.

Concept and Term Discovery/Introduction

At this point, volunteers need to ensure that the concepts of **environmental needs of humans and rabbits** have been introduced to or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their own exploration and define terms using their own words.) Youth should also note that there are different types of needs, including physical, social, and behavioral needs.

Concept Application

1. Observe and compare different types of homes in your community. Some people live in single-standing homes; some people live in duplexes or townhouses; and other people live in apartments. How are these homes similar? How are they different?
2. Observe the homes of wild animals and compare them to those of domesticated animals. How does each type of animal meet its needs?

References

Harriman, Marinell. 2005. *House rabbit handbook: How to live with an urban rabbit*. Alameda, CA: Drolley Press.

ACTIVITY 2



Designing a Rabbit's Environment

Background Information

Wild rabbits are on their own when it comes to finding appropriate housing and shelter to help them survive. In contrast, domesticated rabbits rely on their owners to provide them with the best housing situations and enrichments.

Basic necessities for rabbits include a cage or hutch, a food bowl with food, bedding, a water bottle with water, and chew toys. Additionally, when deciding where to put the cage or hutch, owners must keep in mind that warm temperatures can be a very serious threat to a rabbit.

• Time Required

1 hour

• Concepts

- Environmental needs of rabbits

• Life Skills

Communication, decision making, empathy, keeping records, planning/organizing, teamwork, wise use of resources

• Subject Links

Science, Language Arts, Math

• State Content Standards Supported

Science

- Third Grade:
 - » *Investigation and Experimentation - 5e*
- Fourth Grade:
 - » *Investigation and Experimentation - 6f*

Language Arts

- Third Grade
 - » *Listening and Speaking Strategies - 1.8*

- Fourth Grade:
 - » *Listening and Speaking Strategies - 1.1, 1.8*
- Fifth Grade:
 - » *Listening and Speaking Strategies - 1.3*

Math

- Third Grade:
 - » *Number Sense - 2.1, 2.7, 2.8, 3.3*
 - » *Mathematical Reasoning - 3.3*
- Fourth Grade:
 - » *Number Sense - 2.1*
 - » *Mathematical Reasoning - 3.3*
- Fifth Grade:
 - » *Number Sense - 2.1*
 - » *Mathematical Reasoning - 3.3*
- Sixth Grade:
 - » *Mathematical Reasoning - 3.3*

• Suggested Grouping

Groups of 2 to 3

• Materials Needed

- (* = Materials provided in curriculum)
- *Shopping Lists
- *Rabbit Housing Item Price Lists
- Flip chart or other large paper
- Notebook paper
- Pencils
- Paper
- Crayons/markers
- Scissors
- Calculators
- Stapler

• Getting Ready

- Set up the “store” for the youth to go shopping. Make twice as many *Rabbit Housing Item Price Lists* as you have groups. Cut each item out and staple like items together in a stack. Arrange the stacks of items from each category (housing, bedding, feeding, watering, miscellaneous) on different tables so the youth can visit each “store” separately.
- Make enough *Shopping Lists* for each group.
- Divide the youths into groups of 2 to 3.

Opening Questions

1. **What do you know about what a rabbit needs in its home to live comfortably?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Types of responses to expect: appropriate food, shelter from heat and cold, comfortable bedding, water, safety (no dangerous materials, safety from predators), enough space to move around, appropriate lighting, clean floors with a non-slippery surface, fresh air, stable social group (minimum of one social companion).

2. **What do you think are some extra things that might make the quality of a rabbit's life better?**

Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Types of responses to expect: toys, multiple social companions, variety of feed types, climbing structures, tunnels or other hiding spaces.

- » **Volunteer Tip:** *If the youth are having trouble coming up with ideas for these questions, ask them to refer back to their lists of their own needs for inspiration. For example, if toys were mentioned as one of their needs, ask them what purpose the toys served (fun, exercise, challenge, and preventing boredom). Explore how these same needs are also important for rabbits. How can we address these needs? If family or friends were mentioned, ask what purpose the family or friends serve (comfort, fun, companionship, love, safety). Explore how these same needs are also important to rabbits. Why might*

having the company of other rabbits be an important need? What might be the problems associated with housing rabbits alone (stress, fear, loneliness)?

Procedure (Experiencing) – Budgeting and Shopping

1. At this point, the youth are going to “go shopping” for the items they believe a rabbit will need for its home.
2. Each group of youth will be given a different budget: \$75, \$150, \$200, \$250, or \$300.
3. The groups will then visit the “store” and select the items they believe will best meet the needs of their rabbit and fit within their budget. For each item chosen, the youth should record on their shopping list how much the item cost and why they chose that item. Remind youth that they are shopping for the supplies they will need *to appropriately house two rabbits*.
4. Finally, each group should create a drawing of the home they would create for their rabbit using the materials they purchased on their shopping list.
 - » **Note:** *The drawing should be large, so use a piece of flip chart paper.*

Sharing, Processing, and Generalizing

After the activity, talk with the youth about their general thoughts, observations, and questions. **Ask the youth to share their drawings and describe the items they chose to purchase for their rabbits. Ask the groups to compare their lists.** Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary ask more targeted questions to get to particular points. Specific questions might include:

1. **What are some things you learned about the environmental needs of rabbits and how you can help provide for them? Please explain.** Ask the youth to share their ideas verbally or to write their thoughts and ideas on the paper provided.

2. **How might cost affect decisions when you are trying to house rabbits appropriately? Please explain.** Ask the youth to share their ideas verbally or to write their thoughts and ideas on the paper provided.

Concept and Term Discovery/ Introduction

At this point, volunteers need to ensure that the concept of **environmental needs of rabbits** has been introduced or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their exploration and define terms using their own words.)

Concept Application 1

The things you need in your home or in an animal's home may change. The following scenarios represent situations that would require that you modify to your rabbit's environment.

What would you need to do to address these needs?

1. The rabbits do not get enough exercise. How would you change their environment to allow them to get more exercise? Discuss and share your ideas.
2. You moved to a place where it is very hot and dry all of the time. How would you make sure that your rabbits are protected from the weather? Discuss and share your ideas.
3. Your rabbit has grown old and cannot tolerate much stress. How would you change the environment to help keep him as comfortable as possible? Discuss and share your ideas.
4. Your rabbits have developed an abnormal behavior called "barbering" where they pull fur from themselves or other rabbits. This behavior is sometimes a response to boredom. How would you change your rabbit's environment to make it more interesting for them? Discuss and share your ideas.
5. Your budget has been decreased by 25 percent. What changes would you have to make to your shopping list to be able to create a home for two rabbits with this new budget? Discuss and share your ideas.

Concept Application 2: For Youth Who Have Rabbits

Have the youth take home a copy of their completed shopping lists. Ask youth to engage in a discussion with their family regarding the costs of creating and maintaining an appropriate environment for rabbits. Because the youth already have rabbits at home, they should evaluate the current environment in which their rabbits live and decide if there are ways that the environment could be improved. The youth should discuss these possible improvements and their costs with their family members.

Concept Application 3: For Youth Who Are Planning to Obtain Rabbits

Youth should take home a copy of their completed shopping lists. Ask youth to engage in a discussion with their family regarding the costs of creating and maintaining an appropriate environment for rabbits. Because the youth are planning to obtain a rabbit, they should work with their family members to create a budget and plan a shopping list for the items they will need to properly house their rabbit.

Concept Application 4: For Youth Who Do Not Have Rabbits and Are Not Planning to Obtain Rabbits

Youth should think about any animal that they own or that someone they know owns. Then they should create a list of the environmental needs of that animal based on what they have learned about the environmental needs of rabbits. Remind the youth that some of the needs will be similar and some will be different. If youth have a pet at home, they should evaluate the current environment in which the pet lives and decide if there are ways that the environment could be improved. The youth should discuss these improvements and their costs with their family members.

References

- Harriman, Marinell. 2005. House rabbit handbook: How to live with an urban rabbit. Alameda, CA: Drolley Press.

Rabbit Housing Item Price Lists

(Note: The price for each item is an estimate of the real cost)

• Bedding/Sanitation

Print one-sided and cut out along dashed lines.



Newspaper Bedding

» Free

- Shredded recycled newspaper.
- Environmentally friendly, cheap, but not long lasting.
- May contain ink, clay, or chemical contaminants.
- Dust-free.



Small Animal Litter

» \$8.99

- 8 lb.
- Ideal for rabbits, ferrets, and guinea pigs.
- Naturally controls odor and has great absorbency.
- Dust-free.
- Does not contain inks or dyes.



Natural Fiber Litter

» 10 liters: \$5.29

» 23 liters: \$9.99

» 50 liters: \$14.99

- Made from reclaimed wood pulp waste.
- Natural and biodegradable fiber.
- Sanitized to kill mold, bacteria, and fungus.
- Has high absorption and controls odor.
- Does not contain inks or dyes.



Pet Corn Cob Bedding

» \$5.99

- 5 lb.
- Made of high quality corn cobs.
- Can be used for birds and small animals.
- High absorbency and eliminates odors.
- Will not stick to cages, making cage cleanup easy.



Cotton Nest Pads

» 1 package (6 liners): \$2.75

» 5 packages (30 liners): \$12

- Place pads in cage and rabbits will tear and fluff up the pads to their own liking.
- Will add additional odor and absorption control to existing bedding.



Print one-sided and cut out along dashed lines.

**Tall Corner Litter Pan**

» \$5.02

- Train your rabbit to eliminate in a litter pan. Will cut down on the use of bedding.
- Easy to clean.
- Fits most large cage sizes.
- Stain and odor resistant.

**Plastic Litter Liner**» *Small (fits tray size of 8" × 9½" × 1"; size of liner approximately 15" × 10"): \$1.27*» *Large (fits tray size of 15¼" × 10½" × 1⅛"; size of liner approximately 20" × 13"): \$1.79*

- A plastic lining that makes cleaning the litter pan easier.
- 6 liners in a package.

• Feeders and Waterers

**Rabbit Bottle**

» \$7.87

- Durable, strong, and nontoxic.
- Stainless steel tube with double-ball point.
- Vacuum valve to stop dripping.
- Holds 32 fl oz.

**Flip Top Water Tank with Lock**

» \$9.99

- This heavy duty, high-capacity water bottle has a top that can easily open for filling and cleaning.
- Attaches to wire cages.
- Contains a no-drip valve.

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Veggie Twist for Pets

» \$4.99

- A stretchable spiral that can hold vegetables and snacks.
- Can be hung to any wire cage.
- Bell attached to the bottom.
- Washable and rustproof.
- 4½" diameter.



Stainless Steel Dish for Small Pets

» \$5.99

- 100% Durable material.
- Dishwasher safe.
- 6.9" × 6.9" × 2.4"



Plastic Dish for Small Animals

» \$0.99

- Ideal for food, water, and treats for small animals.
- Spill resistant.



Ceramic Bowls

» 5" diameter: \$5.99

» 7" diameter: \$9.99

» 9" diameter: \$11.99

- Simple design with high-gloss finish so food sticks less to the bowl.
- Can be used for both food and water.



Plastic Dish for Rabbits

» \$1.99

- Plastic and durable.
- Can be used for food or water.
- Tip resistant.
- Easy to clean and dishwasher safe.



Gravity Feeder

» \$7.29

- Holds up to 2 lb of food, lasting for five days.
- Gravity pulls food down into the feeding trough.
- Easy to refill.
- Prevents dust from getting onto the food.
- Plastic design with no sharp edges.
- Helps eliminate respiratory problems that could arise from inhaling food particles.
- Easy to clean.
- 2½"d × 5"w × 8"h.

Print one-sided and cut out along dashed lines.



Spinning Hay and Salad Dispenser

» \$10.49

- Can be used three ways: on the stand, hanging from the cage, or free-wheeling.
- 5½" diameter
- Keeps treats from getting soiled.
- Safe and sanitary.

• Cages



2-Level Rabbit Cage

» \$ 67.99

- Strong, sturdy, and long lasting.
- Includes a solid surface safety ramp and comfort sheet.
- 32" l × 20" w × 14" h.



Large Rabbit Cage

» \$27.99

- Starter cage for your rabbit.
- Easy to assemble.
- Plenty of room.
- Opens from the top and has a large fold-down flap on the side.
- Has a deep base to prevent bedding from scattering and a wire top for easy viewing and ventilation.
- 30" l × 18" w × 16" h.

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Rabbit Cage Starter Kit

» \$47.95

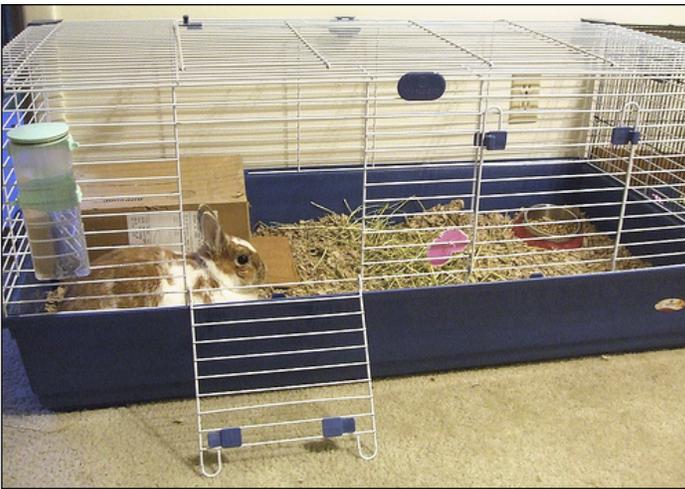
- Perfect for a new rabbit.
- Easy assembly.
- Contains a solid-bottom feeder and a 32 oz water bottle.
- Cage size is 24" × 24" with an overall height of 18" and an actual inside cage height of 16".



Playpen for Small Animals

» \$27.99

- Made for rabbits so they cannot climb out.
- Can be used both indoors and outdoors.
- Provides area for your rabbit to play and exercise while being safe.
- Easy assembly.
- 6 white panels.
- 18" w × 29" h.



Easy Clean Rabbit Cages

» 37" × 19" × 20" h: \$38.99

» 25" × 9" × 20" h: \$29.99

- Designed for family living. Simple set up that allows youth to easily clean and take care of their rabbits.
- 2 doors (top and side).
- Side latch.



Ferret and Rabbit Cages

» \$114.99

- Portable and easy to assemble.
- Includes ramp and platform.
- Textured plastic tray.
- 37" l × 24¹/₂" w × 32" h.
- Bar spacing: 1".



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Deluxe Hutch

» *Medium size: 36" l × 24" w × 34½" h: \$115.99*

» *Large size: 46" l × 24" w × 35" h: \$159.99*

- Made of high-quality lumber, asphalt shingle roof, waterproof nontoxic stain, heavy-duty wire panels, and protective feet for indoor and outdoor use.
- Has a removable plastic tray for easy cleaning.
- Easy to assemble.



Rabbit Run

» *Medium size: 40" × 33" × 33": \$115.99*

» *Large size: 40" × 43½" × 33": \$143.99*

- Secures to the front of the hutch and allows your rabbit to have extra room to move around.
- No floor so can set directly on the ground for pasture grazing.
- Hutch not included.

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Spacious Rabbit Homes

- » 2 levels: 20" w × 32" l × 21" h, 26" high overall: \$99.99
- » 3 levels: 32" w × 32" l × 29" h, 34" high overall: \$229.99

- Very spacious, with multiple levels.
- Has a four-wheel base for easy maneuverability.
- Stain- and odor-resistant plastic base.
- 1" bar spacing.



Large "Condo" Rabbit Cages

- » 33" × 22" × 37" tall (cage without stand 26" tall): \$79.00
- » 40" × 21" × 37" tall (cage without stand 26" tall): \$119.99
- » 47" × 23" × 37" tall (cage without stand 26" tall): \$129.99

- A big cage condo for rabbits.
- Includes steel stand with rollers with easy-lift-off latches to disconnect the cage from the bottom stand.
- Includes a removable floor grille for easy cleaning, 2 doors for easy access, 1" wire spacing.
- Front Door: 10" w × 9" h.
- Top Door: 20" w × 9" h.
- Easy to assemble.



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Cardboard Pet Carrier

» \$3.47

- Made out of corrugated cardboard.
- Safe for transporting pets.
- Can also accommodate dogs, cats, and other small animals.



Large Travel Home

» \$16.99

- 16½" w × 10½" l × 11" h.
- Consists of four sides with a top.
- Wire spacing is ¾".
- Easy-to-clean plastic base.
- Can accommodate rabbits, ferrets, chinchillas.

• Toys and Accessories

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Ball with Bell

» \$13.75

- Safe and easily cleaned.
- 4" diameter.
- 100% non-toxic, made of polyethylene.
- Very durable.
- Makes a jingle sound when moved.
- Satisfies rabbit's instinct to nudge, roll, chew, and play.
Helps eliminate stress and boredom.



Rabbit Castle

» \$21.50

- Can accommodate both small and large rabbits.
- Thoroughly tested and safe to use.
- Made of wood.



Rabbit Rattle

» \$5.35

- Great toy for tossing and chewing.
- Thick wooden bunny silhouette.
- Provides both physical and mental stimulation.
- 3" long.

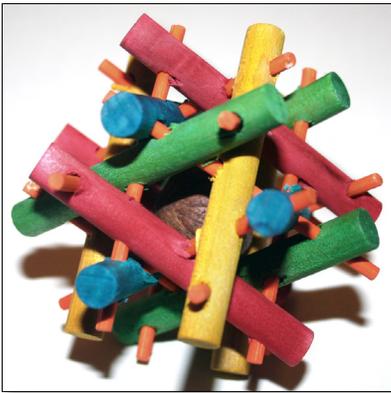


Cardboard Tunnel

» \$15.00

- Provides entertainment and a hiding place for rabbits.
- 9½" diameter × 14" deep.

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Activity Toy

» \$5.89

- Rabbits can play with this unique toy.
- Wooden, contains a rattle.
- 4" in diameter.



Fantastic Stick Toy

» \$7.97

- Made of 6" rectangular wooden pieces.
- Folds out into a mobile.
- Hangs from wire cages.
- Great toy for rabbits to chew.



Carrot Toy

» \$3.99

- Fiber safe for chewing.
- 6" in length.



Durable Bunny ball

» 2.5" ball (for small rabbits, tennis ball size): \$2.99

» 4.5" ball (for large rabbits): \$4.99

- Exercise ball that prevents boredom, stimulating rabbits both mentally and physically.
- Nontoxic and durable.



Wooden Block Mobile

» \$7.97

- Can hang from the top of a rabbit cage.
- Chewable pieces of wood.

Print one-sided and cut out along dashed lines.



Sleeper Bed Cup

» \$10.49

- Shaped like a cup to provide warmth, protection, and comfort for your rabbit.
- Foam-free, so safer for pets who like to chew.
- Easy to fit into rabbit homes.
- Lined with imitation lamb's wool.
- Machine washable.
- 12" w × 10" l × 5" h.



Straw Mats

» *Small:* 11" w × 12" d × 3/16" h: \$2.50

» *Large:* 19" w × 12" d × 3/16" h: \$3.50

» *X-Large:* 19" w × 25" d × 3/16" h: \$6.26

- Woven with natural straw and natural jute.
- Very flexible and can be rolled up.
- Can be chewed on easily.
- Can also protect rabbits' feet from wire cage floorings.



Pet Igloo

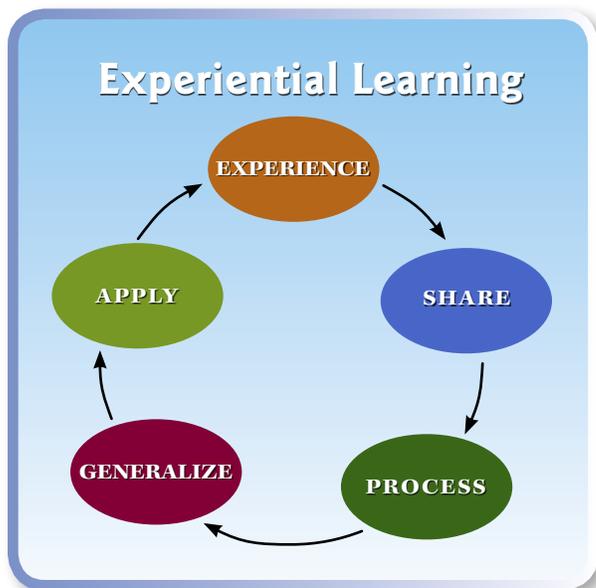
» \$7.49

- Keeps your pet warm.
- Durable, stain- and odor-resistant.
- Well ventilated.
- Easy to clean.
- Perfect hiding place for rabbits when they are scared or want to be hidden.

APPENDIX

The activities in this curriculum were designed around inquiry and experiential learning. Inquiry is a learner-centered approach in which individuals are problem solvers investigating questions through active engagement, observing and manipulating objects and phenomena, and acquiring or discovering knowledge. Experiential learning (EL) is a foundational educational strategy used in 4-H. In it, the learner has an experience phase of engagement in an activity, a reflection phase in which observations and reactions are shared and discussed, and an application phase in which new knowledge and skills are applied to a real-life setting. In 4-H, an EL model that uses a five-step learning cycle is most commonly used. These five steps—Experiencing, Sharing, Processing, Generalizing, and Application—are part of a recurring process that helps build learner understanding over time.

For more information on inquiry, EL, and the five-step learning cycle, please visit the University of California Science, Technology, and Environmental Literacy Workgroup's Experiential Learning Web site, <http://www.experientiallearning.ucdavis.edu/>.



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R A B B I T S : From the Animal's Point of View **3**



Rabbit Nutrition: What You Need to Know

Subject Overview and Background Information

This unit is designed for youth who are interested in learning about the nutrient requirements of rabbits. Like humans' food, whatever a rabbit eats will affect its overall health and energy level. Since domesticated rabbits cannot forage for food themselves, it is essential for their owners to be conscientious about what they are feeding their rabbits. A food pyramid like the one provided by the United States Department of Agriculture (USDA) as a dietary guide for humans is available for rabbits as well.

Rabbits have the same basic nutritional needs as humans. They require adequate amounts of carbohydrates, proteins, fats, fiber, vitamins, minerals, and water. However, too much or too little of any of the nutrients can cause problems for the rabbit.

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Rabbits are **herbivores**, which means that they eat plant material as the main part of their diet. They are able to get sufficient amounts of their basic nutrients from a **balanced diet** that includes hay, vegetables, fruits, and pellets. Pellets are a manufactured food that provides a good array of vitamins and minerals for rabbits. However, rabbit owners should not rely solely on pellets for feed since they are high in calories and can cause obesity. Remember, though, before you settle on your rabbit's diet, that it is important to determine the individual rabbit's specific nutritional requirements based on its age, gender, breed, and size.

Fiber is especially important in a rabbit's diet. Hay is a great source of fiber. Eating hay helps a rabbit's digestion by providing adequate roughage. Additionally, hay is important because it allows them to chew continuously. Rabbits' teeth are constantly growing, so this constant chewing is very important. It helps keep their teeth (particularly their incisors) sharp and worn down to a proper length. If rabbits do not chew enough, they may develop a painful dental disease called **malocclusion**, where the teeth are overgrown and do not match up properly.

One other very important aspect of rabbit nutrition is that they make and eat some of their own nutrients through a process called **coprophagy**. Rabbits eat these soft, nutritious pellets (called **cecotropes**), which they produce and secrete in the early morning. Cecotropes are important in helping the rabbit maintain proper levels of vitamin B. Coprophagy is a normal behavior and very important to the rabbit's overall health.

• Concepts and Vocabulary

Balanced diet, basic nutrients, cecotropes, coprophagy, essential nutrients, feces, herbivore, malocclusion

• Life Skills

Communication, contributions to group effort, cooperation, critical thinking, decision making, healthy lifestyle choices, keeping records, planning/organizing, problem solving, sharing, teamwork

• Subject Links

Science, Language Arts

• Overview of Activities

The first activity is entitled *Eat Your Vegetables!* In this activity, youth will look at a list of foods and categorize them according to the nutrients they provide. They will also be asked to create a list of the types of food they eat on a regular basis and to categorize them based on their nutrient content. They will compare these lists and determine whether the foods they eat provide their necessary daily nutrients.

In the second activity, entitled *Diet Detectives*, each group of youth will be given a scenario of the diet and common daily activities of a fictional person. They need to determine whether the person has received all of his or her necessary nutrients. If not, they will need to determine what nutrients are present in excess and what nutrients are lacking and tell how that might have affected the person's daily activities. They will also need to make recommendations regarding dietary improvements.

The third activity, *Herbivores: You Are What You Eat!*, has youth observing the diet of rabbits. The youth will be given a list of rabbit foods and will categorize the list, compare their categories to those generated by other youth, and, finally, compare it with a rabbit food pyramid. From the food pyramid, they will develop a shopping list of foods that will give rabbits a balanced diet.

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Facts About Rabbits



NUTRITION

• Basic Facts

- Maintaining a rabbit's nutrition is very important. The number-one reason for diseases in rabbits is a poor diet.
- Rabbits are **herbivores**, meaning that they eat primarily plant material. However, rabbits can and will consume an **omnivorous diet** (plant and animal matter), including plants, fungi, roots, tree bark, fruit, snails, and worms.
- Because its eyes are directed out to the sides rather than to the front, a rabbit cannot actually see the food in front of it. Instead, it must use its sense of smell to determine what food has been presented to it and where that food is.
- A rabbit's digestive tract is unlike that of other mammals. The rabbit produces two types of droppings: fecal pellets (the round, dry pellets you see in the litter box); and **cecotropes**, which are made in a portion of the rabbit's digestive system called the cecum. The cecum contains bacteria and fungi that are essential for a rabbit's survival. The cecum also allows a rabbit to digest hay.
- An important part to a rabbit's diet is the production and ingestion of cecotropes in a process called

coprophagy. This is a normal and important behavior for rabbits because the cecotropes provide essential nutrients that rabbits cannot otherwise produce and that are necessary for their health. For this reason it is essential that rabbits have access to their waste in their litter box.

- Having the right diet is very important. If a rabbit develops a blockage in its digestive system, it can cause serious problems.
 - A rabbit's failure to eat for 12 to 24 hours is considered very serious. Take the rabbit to the veterinarian immediately!
 - Proper eating habits and exercise will help your rabbit live a happy, healthy, and long life.
- ### • Food!
- *Hay:* Hay is a good source of fiber and is very important in a rabbit's diet. The bulk of a rabbit's diet should be hay; it helps protect the intestines and prevent fur chewing, hairballs, and an overgrowth of normal bacteria in the cecum that can lead to severe diarrhea and even death. It is important that the hay be stored in a cool, dry place and discarded if it gets wet or moldy.

- *Vegetables:* Vegetables provide nutrients and water. Make sure vegetables are cleaned and rinsed before you feed them to rabbits. Try to provide dark-leafed vegetables, as they contain more nutrients. Some vegetables can cause rabbits to produce soft stools, so be sure to introduce new vegetables to the diet one at a time. Rabbits are like humans in that they enjoy different types of foods, so provide a variety of vegetables every day.
- Here is a list of vegetables that can be given to rabbits, along with each vegetable's calcium content per cup (less calcium is better):
 - » *Beet greens: 46 mg*
 - » *Broccoli: 42 mg*
 - » *Carrots and tops: 30 mg*
 - » *Chicory greens: 180 mg*
 - » *Cilantro: 16 mg*
 - » *Collard greens: 218 mg*
 - » *Dandelion greens: 103 mg*
 - » *Kale: 94 mg*
 - » *Leaf lettuce: 38 mg*
 - » *Mustard greens: 58 mg*
 - » *Parsley: 78 mg*
 - » *Pumpkin leaves: 24 mg*
 - » *Radish and leaves: 28 mg*
 - » *Romaine lettuce: 20 mg*
 - » *Sweet peppers: 6 mg*
 - » *Turnip greens: 105 mg*
 - » *Watercress: 40 mg*
 - » *Rabbits also enjoy herbs like mint, basil, rosemary, anise, and others in small amounts.*
- Here is a list of vegetables you should **not** feed to your rabbit:
 - » *Beans – None of them! (dried beans cause blockage, too)*
 - » *Beets*
 - » *Cabbage (can cause gas)*
 - » *Coffee or tea leaves or plants*
 - » *Corn (like beans, even dried corn can cause a blockage)*

- » *Green beans*
- » *Nuts (can cause blockages)*
- » *Onions*
- » *Packaged greens mixes in a bag (many contain spinach)*
- » *Peas (dried can also cause a blockage)*
- » *Potatoes*
- » *Rhubarb*
- » *Spinach (high calcium oxalate content)*

- *Pellets:* Pellets were originally made for rabbits grown by agricultural producers, not for pet rabbits. The pellets were manufactured with lots of nutrients to make feeding easy and to promote fast growth. If you decide to feed pellets to your rabbit, make sure the pellets are fresh and of high quality. Even though pellets can be a part of a healthy rabbit diet (because they provide balanced vitamins and minerals), they should not form the bulk of the diet. Be careful not to overfeed with pellets: they are high in calories and can lead to health problems such as obesity.
- *Fruits:* Fruits are the best treats to feed rabbits. High-fiber fruits are the best and should be fed in small quantities, and only as treats. If a rabbit eats too much sugar it can cause an imbalance in bacteria and fungi within the cecum. Here is a list of suggested fruits:
 - » *Apples (but NOT the seeds: they are toxic)*
 - » *Bananas and grapes (very limited amounts: they are very high in sugar)*
 - » *Papaya*
 - » *Peaches*
 - » *Pears*
 - » *Pineapple*
 - » *Raspberries*
 - » *Strawberries*

Lastly, do not give your rabbit human treats, such as cereals, nuts, breads, chocolate, or grains or grain products (including crackers and pasta). Other treats to avoid are pet store products that contain high concentrations of dried corn and/or sugar.

• Basic Nutrients

- **Water:** This is the most important nutrient for rabbits. A rabbit must always have access to fresh, clean water. If a rabbit does not get enough water, it will not eat. There are different ways to hold water: a water bottle, a crock, or a bowl.
 - » *A water bottle is highly recommended because it keeps the cage clean and cannot easily be tipped over by the rabbit.*
 - » *A crock or bowl can also be used. Make sure they are secured down so they cannot spill.*
 - » *Clean and disinfect the crock or bowl occasionally to avoid bacterial problems.*
- **Carbohydrates:** Carbohydrates are used for energy. There are some carbohydrates that are essential to a rabbit's diet, but too much of some carbohydrates can make a rabbit sick. Sources include:
 - » *Grains*
 - » *Pellets*
 - » *Fruit*
- **Proteins:** Having enough protein is important because it allows the rabbit to maintain muscle, bone, hair, and eye health. However, too much protein can cause kidney damage, and not enough protein will make a rabbit sick. Sources include:
 - » *Grass hay: 8 to 15% protein*
 - » *Alfalfa hay: 17 to 23% protein*
 - » *Pellets: 13 to 20% protein*
 - » *Grains: 10 to 18% protein*
 - » *Cecotropes: 25 to 38% protein*
- **Fats:** Fats provide energy for rabbits and help with absorption of certain vitamins. However, an excess of fat can lead to obesity and heart disease in older rabbits. Sources of fat include:
 - » *Grains*
 - » *Nuts*
 - » *Pellets*
 - » *Oils (flax seed oils and vegetable oils)*
- **Fiber:** Fiber is crucial in a rabbit's diet. If a rabbit does not eat enough fiber, it can have many digestive problems. Too little fiber can eventually cause serious illness or even death. Sources of fiber include:
 - » *Indigestible parts of plants*
 - » *Hay, straw, and branches*

- » *Fruits and vegetables (but because their water content is so high, hay is a better source of fiber)*
- » *Pellets*

- **Vitamins:** Vitamins are an essential part of a rabbit's diet. They cannot make their own vitamins, so they must get them from the food they ingest (vegetables, pellets) and from cecal bacteria. Rabbits require all vitamins except vitamin C. An extreme excess of vitamin C can cause kidney damage. An excess of vitamin D can cause calcium deposits to form in tissues. Excess vitamin A can cause neurological and skin damage.
- **Minerals:** Minerals are essential to a rabbit's proper bodily function, too. Since plants usually have very high concentrations of minerals, rabbits that are fed adequate amounts of vegetables will not develop deficiencies. Pellets are another good source of minerals. When consumed in excess, most minerals are harmless. An exception is calcium. If consumed in excess, calcium can give a rabbit a condition called "bladder sludge." On the other hand, too little calcium may lead to bone loss and may affect bone strength.

• Requirements for Different Types of Rabbits

Much like humans, rabbits come in many different types. They vary in breed, age, size, and gender, and each type of rabbit has different nutrient requirements. The books listed in the References section provide a good overview of different types of rabbits, and particularly different ages of rabbits.

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ACTIVITY 1



Eat Your Vegetables!

Background Information

Do you know why it's important to eat vegetables? Different kinds of foods provide us with different types of nutrients that allow our bodies to function properly. The **basic nutrients** that we acquire from the foods we eat include carbohydrates, proteins, fats and oils, calcium, vitamin C, vitamin A, and fiber. Some people are very conscious of the food they eat and the nutrients that it provides them, and some people are not. When we write down what we eat, it can help us determine whether we are getting the right nutrients in our daily diet.

• Time Required

30 to 45 minutes

• Concepts and Vocabulary

Basic nutrients. For rabbits, this includes carbohydrates, proteins, fats and oils, calcium, vitamin C, vitamin A, and fiber.

• Life Skills

Communication, critical thinking, healthy lifestyle choices, keeping records, problem solving, sharing

• Subject Links

Language Arts

• State Content Standards

Language Arts

- Third Grade:
 - » *Listening and Speaking Strategies – 1.5*
- Fourth Grade:
 - » *Listening and Speaking Strategies – 1.8*
- Fifth Grade:
 - » *Listening and Speaking Strategies – 1.5*

• Suggested Grouping

Pairs.

• Materials Needed

(* = *Materials provided in curriculum*)

- * General Source of Nutrients Worksheet
- * List of Familiar Foods for Humans
- Notebook paper
- Pen/pencil; markers
- Flip chart paper

• Getting Ready

- Make enough copies of the *General Source of Nutrients Worksheet* to provide each youth with *two* copies.
- Pass out one copy of the *List of Familiar Foods for Humans* to each pair.
- Provide each pair with flip chart paper and writing implements.

Opening Questions

1. **We've all heard our parents say, "Eat your vegetables!" Why do you think this might be important? What do you think makes vegetables and other plant-based foods such as fruit so important to our diet?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What other foods do you think are important to eat? Explain why you think they are important.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

1. Working in pairs, have the youth look at the *List of Familiar Foods*. Have them organize the foods and place each under the correct nutrient category (e.g., protein, carbohydrate) on the *General Source of Nutrients Worksheet*.
2. Additionally, because people come from so many different backgrounds and cultures, have each pair brainstorm and write down at least one food that is common in his or her home or culture and that is not on the *List of Familiar Foods*. Have them place the food item under the correct nutrient category.

Sharing, Processing, and Generalizing

Have the youth share their lists with the rest the group. Have them compare their lists to other groups' lists. What are the similarities? What are the differences, if any? If there are differences, discuss why. Have the youth also share information about their ethnic foods and compare them with those of other groups.

Each nutrient has an important function for the body and is easily obtained in food. Follow the lines of thinking developed through the general questions raised by the youth, and use these to draw out their thoughts and ideas; if necessary, use more specific questions as prompts to get to particular points. Examples might include

1. **What differences are there between how the groups categorized the foods?** Discuss these differences and work toward a consensus on categorization.
2. **Why do you think it is important to eat a variety of foods each day?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **Why do you think that certain foods are called “junk foods”? What do you think are the differences between junk foods and healthy foods?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Concept and Term Discovery/Introduction

At this point, volunteers need to ensure that the concept of **basic nutrients** has been introduced or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their exploration and define terms using their own words.)

Concept Application

1. Ask each youth to develop a list of foods that they eat frequently.
2. Working in pairs, ask the youth to categorize their lists under the correct nutrient category on the *General Source of Nutrients Worksheet*.
3. Have the youth discuss their food choices. If they believe that their diet is not balanced, have them decide on some alternatives they might choose in order to obtain different essential nutrients.

References

- Applegate, E., and M. Braun. 2004. Nutrition basics for better health and performance. Kendall/Hunt Publishing Company: Dubuque, IA.
- Netzer, C. T. 2000. The complete book of food counts. Dell Publishing: New York.
- United States Department of Agriculture. 2009. Inside the Pyramid. What are “oils”? MyPyramid.gov. <http://www.mypyramid.gov/pyramid/oils.html>.



List of Familiar Foods for Humans

apples



avocados

bananas

beef

broccoli

brown (whole grain) rice

butter

candy



canola oil

carrots

cheese

chicken

chili

chocolate

coconut oil

corn

cucumbers

deep-fried foods

donuts

eggs

grapefruit juice

grapes

green beans



ice cream

kidney beans

lemons

margarine

milk

oatmeal

oranges

pasta (processed)

pastries

peaches

peanuts

pork



potatoes

pretzels (processed)

salmon

soda

spinach

strawberries



syrup

tomatoes

tunafish

white bread (processed)

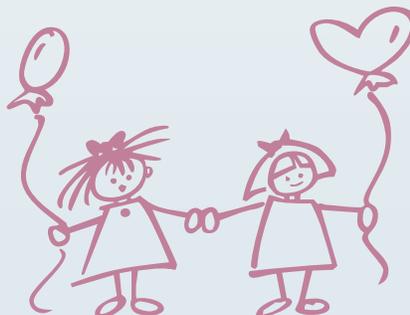
white rice (processed)

whole grain bagels

whole wheat bread

whole wheat pasta

yogurt (plain, low fat)



General Source of Nutrients Worksheet

PROTEIN

Protein is found in animal products, nuts, and beans.

1. _____
2. _____
3. _____
4. _____
5. _____

CARBOHYDRATES

Carbohydrates are found in processed wheat and grains and in starchy vegetables.

1. _____
2. _____
3. _____
4. _____
5. _____

FIBER

Fiber is found in whole grains, beans, oats, and bran.

1. _____
2. _____
3. _____
4. _____
5. _____

CALCIUM

Calcium is found in dairy products and dark green vegetables.

1. _____
2. _____
3. _____
4. _____
5. _____

VITAMIN C

Vitamin C is found in fruit, especially citrus fruit.

1. _____
2. _____
3. _____
4. _____
5. _____

General Source of Nutrients Worksheet, Continued**VITAMIN A**

Vitamin A is found in animal products and reddish colored foods.

1. _____
2. _____
3. _____
4. _____
5. _____

FATS AND OILS

Oils can be found in fish, nuts, and vegetable oils. Fats come from many animal foods (including butter) and processed vegetable oils (including margarine).

1. _____
2. _____
3. _____
4. _____
5. _____

LIMITED NUTRITIONAL VALUE

These foods do not provide important nutrients. They include processed snack foods that are high in salt and sugar.

1. _____
2. _____
3. _____
4. _____
5. _____

ACTIVITY 2



Diet Detectives

Background Information

What we eat can have a big influence on what we can do and how we feel. Dietary deficiencies in important nutrients such as carbohydrates, proteins, calcium, vitamin C, vitamin A, and fiber over a period of time can lead to problems like low energy, poor concentration, and illness. A **balanced diet** that contains all essential nutrients will help us keep our minds and bodies healthy, active, and strong.

• Time Required

40 to 60 minutes

• Concepts and Vocabulary

Balanced diet. Eating the right types and amounts of food to maintain a healthy body.

• Life Skills

Communication, contributions to a group effort, cooperation, critical thinking, healthy lifestyle choices, keeping records, problem solving, sharing, teamwork

• Subject Links

Science, Language Arts

• State Content Standards

Science

- Third Grade:
 - » *Investigation and Experimentation – 5d*
- Fourth Grade:
 - ◇ *Investigation and Experimentation – 6c*
- Sixth Grade:
 - » *Investigation and Experimentation – 7a, 7e*

Language Arts

- Third Grade:
 - » *Reading Comprehension – 2.2*
- Fourth Grade:
 - » *Reading Comprehension – 2.3*
 - » *Listening and Speaking Strategies – 1.7, 1.8*
- Fifth Grade:
 - » *Reading Comprehension – 2.4*
 - » *Listening and Speaking Strategies – 1.5*
- Sixth Grade:
 - » *Reading Comprehension – 2.3*
 - » *Listening and Speaking Strategies – 1.5*

• Suggested Grouping

Groups of 2 to 5.

• Materials Needed

- (* = *Materials provided in curriculum*)
- * *General Sources of Nutrients Key*
- * *USDA MyPyramid*
- * *Sample Diets*
- * *General Facts on Nutrients Handout*
- Flip chart paper
- Pencil/pen
- Notebook paper

• Getting Ready

- Make enough *Sample Diets* worksheets to give one to each group.
- Make enough copies of the *General Facts on Nutrients Handout* and *General Sources of Nutrients Key* to give one to each group.
- Make enough *USDA MyPyramids* to give one to each group.
- Pass out the materials to each group.

Opening Questions

1. **When you hear the phrase “a balanced diet,” what does that mean to you?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What do you think might happen if we didn't eat enough of the types of foods that provide the proper nutrients?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

(Facilitator Note: Please set this scenario up for the youth.)

Explain to them that they are “Diet Detectives.” Their job is to review different people's diets and use the resources provided to recommend changes to make the diets more balanced.

1. A set of *Sample Diets*, a copy of the *General Facts on Nutrients Handout*, a copy of the *General Sources of Nutrients Key*, and a copy of the *USDA MyPyramid* will be distributed to each group.
2. Each group will read the *Sample Diets*. From the information provided on the diets, the *General Facts on Nutrients Handout*, and the *Human Food Pyramid*, the youth will work together to determine the following:
 - » Which nutrients, if any, do they believe are missing or present in excess from the different diets? Please have them record and explain their ideas on the flip chart paper provided.
 - » How can each diet be improved? What foods would they recommend be added to or removed from the diets to make them better balanced? Please have them record and explain their ideas on the flip chart paper provided.

Volunteer Note: It may help to have the youth generate a chart to organize their thoughts.

Sharing, Processing, and Generalizing

After the youth have completed the procedure, have them share their thoughts and responses to the different scenarios. Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include

1. **How, if at all, do your group's answers differ from those of other groups?** Compare the groups' answers and talk about how and why they differ. Ask the youth to record their thoughts and ideas on the paper provided.
2. **What do you believe might happen if people who were missing an essential nutrient continued their diet unchanged for a long period of time?** Ask the youth to record their thoughts and ideas on the paper provided.
3. **What are some ways you can make sure you have a balanced diet and get the proper nutrients?** Ask the youth to record their thoughts and ideas on the paper provided.



Concept and Term Discovery/ Introduction

At this point, volunteers need to ensure that the concept of a **balanced diet** has been introduced or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their exploration and define terms using their own words.)

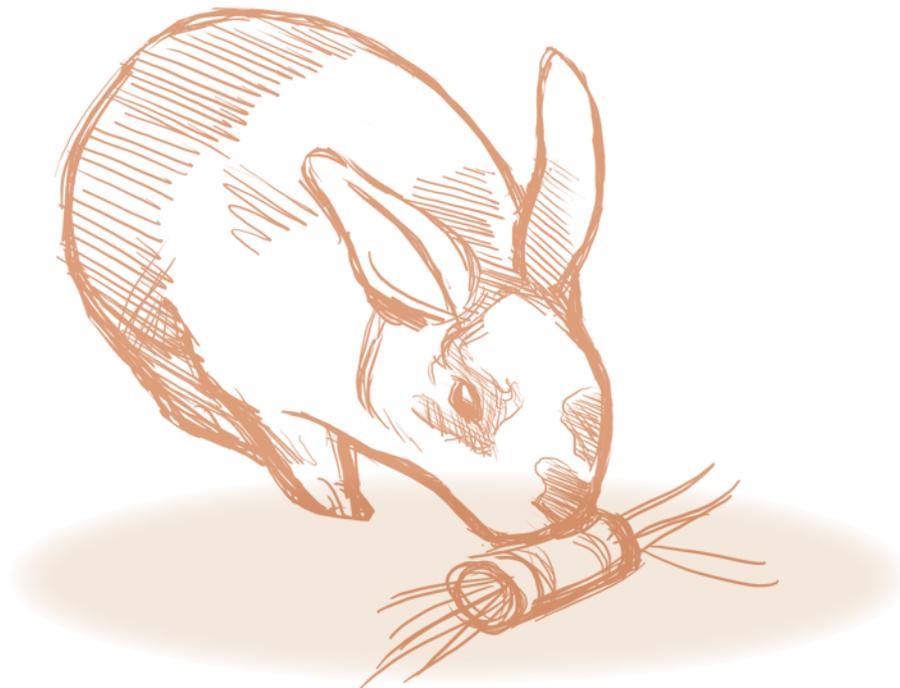
Concept Application

1. On their own piece of paper, ask each youth to write down everything they can remember eating in the last three days. Ask the youth in each group to share their lists with one another, then have the different groups share and compare their results.
2. Using the piece of flip chart paper provided, ask the groups to put the foods from their individual papers into categories based on food types. Then ask them to rank the categories, first in according to quantities consumed (how much of a given food type) and then according to importance for good health (healthy vs. not-so-healthy foods).
 - » (**Volunteer Tip:** *Encourage the youth to develop their own organizational scheme for categorizing the food.*)

3. Once all of the groups have completed steps 1 and 2, ask them to compare their results with the *USDA MyPyramid*. What are some of their observations?
4. Based on the foods that they eat, ask each group to prepare a three-day menu that complies with the recommendations of the *USDA MyPyramid*.
5. Ask the groups to share and compare their three-day menus.

References

- Applegate, E., and M. Braun. 2004. Nutrition basics for better health and performance. Kendall/Hunt Publishing Company: Dubuque, IA.
- MediZine LLC. 2009. 13 keys to a healthy diet. Foundations of Wellness. UC Berkeley wellness.com. <http://www.berkeleywellness.com/html/fw/fwNut01HealthyDiet.html>.
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- United States Department of Agriculture. 2009. Dietary guidance. USDA Food guide pyramid resources. http://fnic.nal.usda.gov/nal_display/index.php?info+center=4&tax_level=3&tax_subject=256&topic_id=1348&level3_id=5715.
- University of Maryland Medical Center. 2009. Nutrition. <http://www.umm.edu/altmed/ConsModalities/Nutritioncm.html>.



General Source of Nutrients Key

Note: The examples for each category are common sources for each nutrient listed

PROTEIN

beef
cheese
chicken
chili
corn
eggs
kidney beans
milk
peanuts
pork
salmon
tunafish

CARBOHYDRATES

brown rice
corn
pasta (processed)
pretzels
white bread
white rice
whole grain bagels
whole grain pasta
whole wheat bread

FIBER

apples
broccoli
brown rice
chili
corn
kidney beans

oatmeal
oranges
peaches
potatoes
strawberries
whole grain bagels
whole grain pasta
whole wheat bread

CALCIUM

broccoli
cheese
low fat milk
spinach
whole milk
yogurt (plain, low fat)

VITAMIN C

apple juice
apples
broccoli
cucumbers
grapefruit juice
grapes
green beans
lemons
oranges
peaches
potatoes
spinach
strawberries
tomatoes

VITAMIN A

beef
broccoli
carrots
cheese
eggs
green beans
milk
peaches
spinach
strawberries
tomatoes

FATS AND OILS

avocados
butter
canola oil
coconut oil
margarine
peanuts
salmon

LIMITED NUTRITIONAL VALUE

chocolate
deep-fried foods
donuts and other pastries with
high sugar content
ice cream
other candy
soda
syrup

Reference

Nutrition Data: Know what you eat. NutritionData.com. <http://www.nutritiondata.com>

MyPyramid For Kids

Eat Right. Exercise Have Fun.
MyPyramid.gov

Grains	Vegetables	Fruits	Milk	Meat & Beans
<p>Make half your grains whole</p> <p>Start smart with breakfast. Look for whole-grain cereals.</p> <p>Just because bread is brown doesn't mean it's whole-grain. Search the ingredients list to make sure the first word is "whole" (like "whole wheat").</p>	<p>Vary your veggies</p> <p>Color your plate with all kinds of great-tasting veggies.</p> <p>What's green and orange and tastes good? Veggies! Go dark green with broccoli and spinach, or try orange ones like carrots and sweet potatoes.</p>	<p>Focus on fruits</p> <p>Fruits are nature's treats – sweet and delicious.</p> <p>Go easy on juice and make sure it's 100%.</p>	<p>Get your calcium-rich foods</p> <p>Move to the milk group to get your calcium. Calcium builds strong bones.</p> <p>Look at the carton or container to make sure your milk, yogurt, or cheese is lowfat or fat-free.</p>	<p>Go lean with protein</p> <p>Eat lean or lowfat meat, chicken, turkey, and fish. Ask for it baked, broiled, or grilled – not fried.</p> <p>It's nutty, but true. Nuts, seeds, peas, and beans are all great sources of protein, too.</p>
<p>For an 1,800-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to MyPyramid.gov.</p>				
<p>Eat 6 oz. every day: at least half should be whole</p>	<p>Eat 2 1/2 cups every day</p>	<p>Eat 1 1/2 cups every day</p>	<p>Get 3 cups every day: for kids ages 2 to 8, it's 2 cups</p>	<p>Eat 5 oz. every day</p>
<p>Oils Oils are not a food group, but you need some for good health. Get your oils from fish, nuts, and liquid oils such as corn oil, soybean oil, and canola oil.</p>				

Reference

United States Department of Agriculture. 2009. Dietary guidance. USDA Food guide pyramid resources. http://fnic.nal.usda.gov/nal_display/index.php?info=center=4&tax_level=3&tax_subject=256&topic_id=1348&level3_id=5715.

Sample Diets

MARK'S DIET

Breakfast: 3 pieces of white toast with butter

Lunch: White rice with chopped spinach

Dinner: White pasta with steamed carrots, apple juice

JENNY'S DIET

Breakfast: Eggs and sausage

Lunch: Hotdog on a white bun

Dinner: Steak with chicken, apple juice

MOLLY'S DIET

Breakfast: 2 pieces of whole wheat toast with butter, milk

Lunch: brown rice topped with peanuts, grapefruit juice

Dinner: whole wheat bagel with cheese, apple juice

SCOTT'S DIET

Breakfast: 2 donuts

Lunch: two orders of French fries, one candy bar

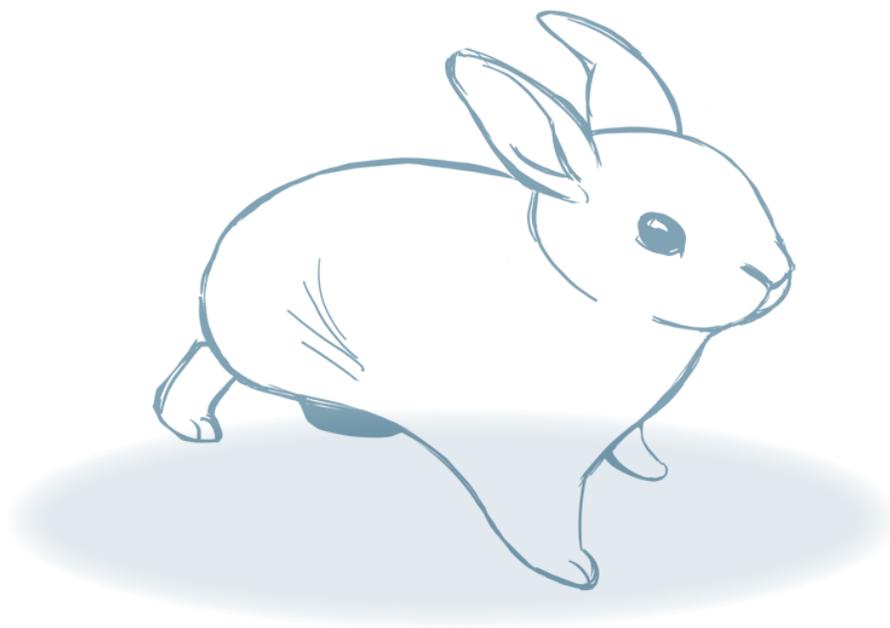
Dinner: deep-fried chicken, broccoli, soda

SYDNEY'S DIET

Breakfast: bacon, French toast (made with white bread)
with lots of butter and syrup

Lunch: fried chicken strips, French fries

Dinner: 4 slices of cheese pizza, chocolate cake



General Facts on Nutrients Handout

• Carbohydrates

- **Function:** Carbohydrates provide energy to the body, especially to the brain and the nervous system.
- **Types and sources of carbohydrates:**
 - » *Simple carbohydrates: Fruits, some vegetables, some dairy products, refined grains (processed flour), sugar, and corn syrup.*
 - » *Complex carbohydrates: Starchy vegetables, whole grains and cereals*
- **Possible effects:**
 - » *Too little: Fatigue or lack of energy, malnutrition, and increased fat intake.*
 - » *Too much: Obesity.*

• Protein

- **Function:** Protein is an important source of energy and is essential for growth and organ function.
- **Sources of protein:** Meat, fish, eggs, cheese, beans, lentils, tofu and nuts.
- **Possible effects:**
 - » *Too little: Muscle loss, decrease in growth, decreased immunity (easier to get diseases or illnesses).*
 - » *Too much: Can cause high cholesterol and different types of diseases, such as gout.*

• Calcium

- **Function:** Calcium is a very important mineral because it makes up structures like teeth and bones. It helps us grow and maintains our bodies. It also helps to prevent diseases like osteoporosis (weak bones).
- **Sources:** It is found in many types foods, but is very abundant in dairy products. It is also found in green leafy vegetables (e.g., broccoli), some seafood (e.g., salmon), almonds, and dried beans.

▪ **Possible effects:**

- » *Too much: Normally no side effects appear, but if calcium intake is high over a long period of time it can cause the development of kidney stones.*
- » *Too little: Deficiencies in calcium can lead to increased chance of broken bones or tooth decay.*

• Vitamin A

- **Function:** Vitamin A helps maintain healthy teeth, bones, soft tissue, and skin. It also helps promote good vision.
- **Sources:** Meats and animal products (milk, eggs), dark leafy green vegetables (e.g., spinach), and brightly colored vegetables (e.g., carrots) and fruits (e.g., cantaloupe).
- **Possible effects:**
 - » *Too little: Vision problems; decreased resistance to disease.*
 - » *Too much: Can cause Vitamin A poisoning when consumed in very large amounts.*

• Vitamin C

- **Function:** Vitamin C is essential for normal growth and development. It is needed to make skin, scar tissue, heal wounds, and repair bone, cartilage, and teeth. Since our bodies cannot make or store vitamin C, we must get it from foods we eat.
- **Sources:** Fruits and vegetables.
- **Possible effects:**
 - » *Too little: Damaged hair, bleeding gums, rough and dry skin, easy bruising, slow healing of wounds, and nosebleeds.*
 - » *Too much: Vitamin C toxicity can occur which can lead to upset stomachs and diarrhea.*

• Fiber

- **Function:** Fiber is important in the diet because it helps us feel full after eating, and that can help with weight control. It also helps with food digestion and prevents constipation.
- **Types and sources of Fiber:**
 - » *Soluble:* This type of fiber is digested slowly in the body and can lower cholesterol and help prevent heart disease. Sources of soluble fiber include oat bran, barley, nuts and seeds, beans, and some fruits and vegetables.
 - » *Insoluble:* This helps food pass through the stomach and intestines faster and adds bulk to the stool. Types of food high in insoluble fiber include wheat bran, vegetables, and whole grains.
- **Possible effects:**
 - » *Too little:* Constipation (difficulty passing bowel movements).
 - » *Too much:* Eating too much in a short period of time can cause gas, bloating, and cramps.

• Fats and Oils

- **Function:** Fats and oils are a source of energy. There are essential fatty acids that our body cannot make so we must get them from our diet. When stored in our bodies, fat is like an energy reserve, storing calories for when we do not have food to eat. Stored fat also helps insulate the body, maintains healthy hair and skin, and helps our body absorb different vitamins.

▪ Types of fats:

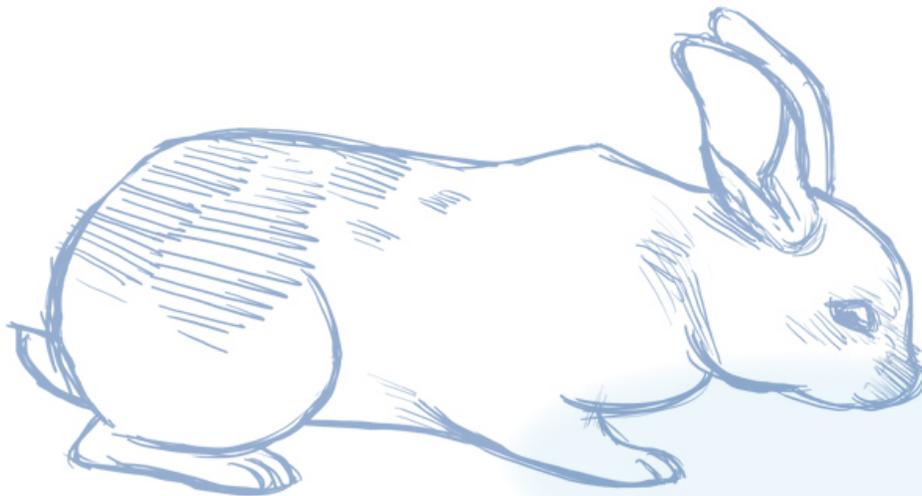
- » *Saturated fats:* These types of fat are referred to as “bad fats” and can increase “bad cholesterol” levels in a person’s blood. They are found in fatty meats and in some other animal products (e.g., butter, cheese, ice cream).
- » *Unsaturated fats:* These types of fat are referred to as “good fats” and can decrease “bad cholesterol” levels in a person’s blood. They are found in most liquid vegetable oils.

▪ Possible effects:

- » *Too little unsaturated fat:* Hair loss or dull hair, brittle nails, and lack of cushioning for organs.
- » *Too much saturated fat:* Possible heart disease, clogged arteries, and obesity.

• Sweets

- **Function:** Quick source of energy.
- **Sources:** Processed foods that have an excess of sugar (e.g., candy).
- **Possible effects:** Too much sugar can cause a “sugar high,” when a person gets a “rush” of energy for a period of time and then gets an energy “crash.” Dental decay, excess weight gain, and stomachaches can result from eating too much sugar.



References

- Harvard School of Public Health. 2009. The nutrition source: Protein. <http://www.hsph.harvard.edu/nutritionsource/protein.html>.
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- U.S. National Library of Medicine and the National Institutes of Health. 2009. Vitamin A. Medline Plus. <http://www.nlm.nih.gov/medlineplus/ency/article/002400.htm>
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Sample Diets

- **Mark's diet:** Low in protein
- **Jenny's diet:** Low in carbohydrates
- **Molly's diet:** High in fiber
- **Scott's diet:** Too many sweets
- **Sydney's diet:** Too much saturated fat

ACTIVITY 3



Herbivores—You Are What You Eat!

Background Information

Rabbits are **herbivores**, consuming principally plant matter in their diets. In order for them to have a long and healthy life, they must receive a balanced diet from a variety of different types of plant matter that contain all of the **nutrients** they need.

The most important food for a pet rabbit is fresh hay. Hay provides the necessary fiber for a healthy digestive system and keeps the rabbit chewing. Normal chewing of their food wears down their teeth, keeping them at their proper length. Without proper chewing, their teeth may grow very long and cause a condition called **malocclusion** (also known as *buck teeth*). This may be painful for the rabbit and will make it difficult for the rabbit to eat.

Rabbits also need fresh water and vegetables. Although rabbits obtain a lot of their water from the plant matter they consume, fresh water should always be available. Fresh, moist greens like hay are important in helping maintain a healthy digestive system in rabbits. Additionally, fruit may be given to rabbits as a treat, but only in small quantities because they can become sick if they consume too much sugar.

Commercial rabbit pellets provide another potential source of nutrients. However, very little pelleted food is actually required for a healthy diet. Pellets lack water, are high in fat, and tend to promote obesity in adult rabbits; furthermore, if rabbits are fed too many pellets, they will often ignore the hay that is essential to their digestive system.

Rabbits produce two different kinds of solid waste. One kind, *hard feces*, is the waste from their digestion and should be removed from their cage. The other kind, *soft*

feces (**cecotropes**), is eaten by the rabbit directly from its anal opening in a process called **coprophagy**. Coprophagy allows the rabbit to get more nutrients out of its food by eating it twice.

- **Time Required**

30 to 45 minutes

- **Concepts and Vocabulary**

Cecotropes. A digestive product produced by rabbits, passed through the intestines, and re-ingested for its nutrients. Also called “night feces.”

Coprophagy (pronounced “kuh-prof-ug-ee”).

Feeding on a specific type of excrement (such as cecotropes) to gain nutrients.

Essential nutrients. Nutrients required by an animal's body that cannot be produced by the animal's body. Essential nutrients must be obtained through an animal's diet.

Feces. Undigested food and nutrients in the body that leave the body as waste matter.

Herbivore (pronounced “hur-buh-vohrr”). An animal that feeds on plants. Examples include rabbits, sheep, and horses.

Malocclusion (pronounced “mal-uh-kloo-zhuhn”).

A disease where teeth don't meet together properly.

- **Life Skills**

Teamwork, contributions to group effort, sharing, cooperation, communication, keeping records, planning/organizing, critical thinking, problem solving, decision making

• Subject Links

Science, Language Arts

• State Content Standards

Science

- Third Grade:
 - » *Investigation and Experimentation – 5a, 5c, 5d, 5e*
- Fifth Grade:
 - » *Investigation and Experimentation – 6g, 6h*
- Sixth Grade:
 - » *Investigation and Experimentation – 7d, 7e*

Language Arts

- Third Grade:
 - » *Listening and Speaking Strategies – 1.5*
- Fourth Grade:
 - » *Listening and Speaking Strategies – 1.8*
- Fifth Grade:
 - » *Listening and Speaking Strategies – 1.5*

• Suggested Grouping

Small groups of 3 to 5 individuals.

• Materials Needed

(* = Materials provided in curriculum)

- * *Examples of Rabbit Foods*
- * *Rabbit Dietary Facts*
- * *Rabbit Dietary Needs Worksheet*
- * *Rabbit Food Pyramid*
- A supply of flip chart paper or one large piece of butcher paper per group
- Colored markers (shared materials)

• Getting Ready

- Divide the youth into small groups of 3 to 5 individuals.
- Provide each group with adequate amounts of butcher paper or flip chart paper and markers.
- Give each group a list of *Examples of Rabbit Foods*.
- Give each group a *Rabbit Dietary Facts* handout.
- Give each youth a *Rabbit Dietary Needs Worksheet*.
- Make enough copies of the *Rabbit Food Pyramid* so each group can have one.

Opening Questions

1. **Knowing what you do about the types of foods that humans need in order to be healthy, what do you know about the types of foods rabbits need? Please explain.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **How do you think rabbits living in the wild obtain a proper diet? If you had a pet rabbit, what might you have to do to provide it with proper nutrition?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

1. Ask each of the groups to take the list of *Examples of Rabbit Foods* and organize the foods into as many different categories as possible.
2. Then ask the groups to rank the foods in order of what they believe to be most to least important for a rabbit's health. Have each group try to create a food pyramid for rabbits.
3. Once step 2 has been completed, ask the groups to share their different food categories and the food pyramids they have designed. How are they similar? How are they different? Provide each group with a copy the *Rabbit Food Pyramid* and a copy of the *Rabbit Dietary Facts* handout and make further comparisons.
4. Using the *Rabbit Dietary Facts* handout and the *Rabbit Food Pyramid*, ask each group to develop a shopping list for a healthy rabbit.
5. Once step 4 has been completed, ask the groups to share their shopping lists. How are they similar? How are they different?

Sharing, Processing, and Generalizing

Follow the lines of thinking developed through general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include

- 1. What are some important things you have learned about a rabbit's nutritional needs? Please explain.** Ask the youth to write their thoughts and ideas on the paper provided.
- 2. What might be some signs that a rabbit's nutritional needs are not being met? Please explain.** Ask the youth to write their thoughts and ideas on the paper provided.
- 3. How does a rabbit's food pyramid compare to the USDA MyPyramid? Please explain.** Ask the youth to write their thoughts and ideas on the paper provided.

Concept and Term Discovery/Introduction

At this point, volunteers need to ensure that the concepts of nutritional needs and a balanced diet for rabbits have been introduced or discovered by the youth. The terms **herbivore**, **malocclusion**, and **coprophagy** may need to be introduced if they were not used by the youth during the activity. (**Note:** The goal is to have the youth discover the concepts and terms on their own. It helps if they can define terms and concepts using their own words.)



Concept Application

- Many of a rabbit's nutritional requirements are based on age and body weight. If the youth have rabbits at home, have them find out the rabbits' ages before proceeding with this application activity. Once they know their rabbit's age, have them work out their rabbit's specific nutritional requirements (use the *Rabbit Dietary Facts*, *Rabbit Food Pyramid*, and *Rabbit Dietary Needs Worksheet* provided) and develop a feeding plan (using the list of examples of rabbit food) that has a variety of foods that meet their rabbit's needs.
- If some of the youth do not have a rabbit, assign them a fictional rabbit of a certain age (e.g., "Hoppy," a one-year-old female; "Bugs," a four-year-old male) and ask them to do the same exercise. Once completed, have the youth share their feeding plans.

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Rabbit Food Pyramid

DEFINITE NO-NO'S

These are foods that should not be given at any time.

- No Chocolate (poisonous!)
- Cookies
- Crackers
- Breakfast Cereal
- Yogurt Drops
- Pasta
- Bread
- Most "human" treats

Treats

Limit to very small amounts, 1 or 2 times per week; this includes fresh fruits. Consult with your rabbit's vet.



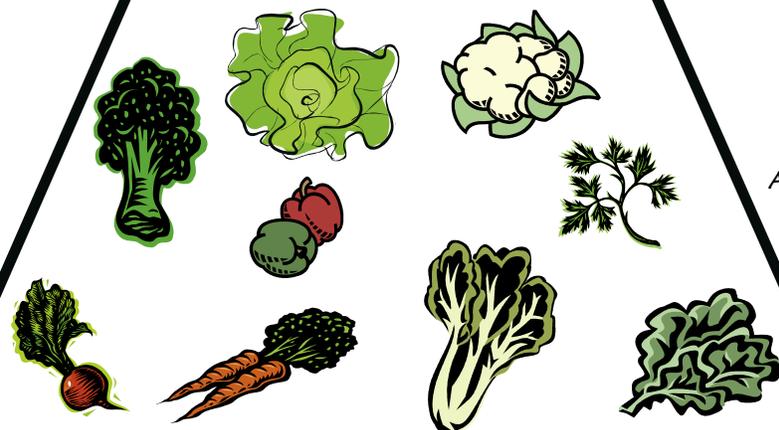
Pellets

Limited, high-quality pellets (no seeds or dried fruits) as directed by your rabbit's vet.



Vegetables

A variety of fresh greens, daily.



Timothy Orchard Grass Oat Hay Brome Hay

Only very small amounts of Alfalfa, if any. Check with your vet.

Unlimited Grass Hays

This is the staple of your rabbit's diet.



Be sure to consult with your veterinarian on the proper diet for your rabbit's optimum health.



Examples of Rabbit Foods



Alfalfa hay
Apples (*NOT the seeds: they are toxic.*)
Bananas and grapes
Beet greens
Broccoli
Carrots and tops
Chicory greens
Cilantro
Collard greens
Dandelion greens
Kale
Leaf lettuce
Mustard greens
Oat hay
Orchard grass
Papaya
Parsley
Peaches
Pears
Pellets
Pineapple
Pumpkin leaves
Radish and leaves
Raspberries
Romaine lettuce
Strawberries
Sweet peppers
Timothy hay
Turnip greens
Watercress

Rabbit Dietary Facts

• What are the basics of a good house rabbit diet?

A rabbit's diet should be made up of high-quality pellets, fresh hay (alfalfa, timothy, or oat), water, and fresh vegetables. Anything beyond that is a "treat" and should be given only in limited quantities.

• What makes a good pellet?

Pellets should be fresh and relatively high in fiber (18% minimum fiber). Do not purchase more than 6 weeks' worth of feed at a time; food older than that may spoil. Pellets should make up less and less of a rabbit's diet as he or she grows older, and hay should still be kept available 24 hours a day.

• What kinds of vegetables should I feed my rabbit?

When shopping for vegetables, look for a selection of different veggies. Look for both dark leafy veggies and root vegetables, and try to get a variety of colors. Stay away from beans and rhubarb.

• Is feeding hay important?

Hay is essential to a rabbit's good health, providing roughage that reduces the danger of hairballs and other blockages and lowers the risk of malocclusion. Twigs from an apple tree also provide good roughage.

• What NOT to feed a rabbit.

- Beans – None of them! (Dried beans can cause a blockage, too.)
- Beets
- Cabbage
- Coffee or tea leaves or plants
- Corn
- Green beans
- Onions
- Nuts
- Peas
- Potatoes
- Rhubarb
- Spinach
- Packaged greens mixed in a bag

• What quantities of food should I feed baby and "teen-aged" rabbits?

- Birth to 3 weeks: mother's milk.
- 3 to 4 weeks: mother's milk, nibbles of alfalfa and pellets.
- 4 to 7 weeks: mother's milk, access to alfalfa and pellets.
- 7 weeks to 7 months: unlimited pellets, unlimited hay (also see *12 weeks*, below).
- 12 weeks: Introduce vegetables (one at a time and in quantities of less than ½ oz).

• What quantities of food should I feed young adult rabbits? (7 months to 1 year old)

- Introduce timothy hay, grass hay, and oat hays; decrease alfalfa.
- Decrease pellets to ½ cup per 6 lb of body weight.
- Increase daily vegetables gradually.
- Fruit: A rabbit's daily ration of fruit should be no more than 1 to 2 oz per 6 lb of the rabbit's body weight (because of caloric content).

• What quantities of food should I feed to mature adult rabbits? (1 to 5 years old)

- Unlimited timothy, grass hay, oat hay, straw.
- ¼ to ½ cup pellets per 6 lb of body weight (depending on metabolism and proportionate to veggies).
- Minimum 2 cups of chopped vegetables per 6 lb of body weight.
- Fruit: Daily ration should be no more than 2 oz (2 Tablespoons) per 6 lb of body weight.

• What quantities of food should I feed to senior rabbits? (Over 6 years old)

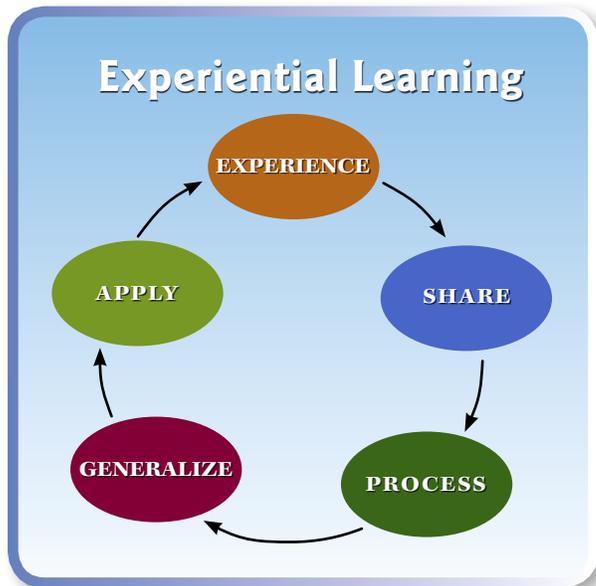
- If sufficient weight is maintained, continue feeding them an adult diet.
- Frail, older rabbits may need unrestricted access to pellets to keep their weight up. Alfalfa can only be given to underweight rabbits if their calcium levels are normal. Annual blood workups are highly recommended for geriatric rabbits.

Rabbit Dietary Needs Worksheet

BREED	NAME	AGE	WEIGHT	FOOD	AMOUNT	SOURCE

APPENDIX

The activities in this curriculum were designed around inquiry and experiential learning. Inquiry is a learner-centered approach in which individuals are problem solvers investigating questions through active engagement, observing and manipulating objects and phenomena, and acquiring or discovering knowledge. Experiential learning (EL) is a foundational educational strategy used in 4-H. In it, the learner has an experience phase of engagement in an activity, a reflection phase in which observations and reactions are shared and discussed, and an application phase in which new knowledge and skills are applied to a real-life setting. In 4-H, an EL model that uses a five-step learning cycle is most commonly used. These five steps—Experiencing, Sharing, Processing, Generalizing, and Application—are part of a recurring process that helps build learner understanding over time.



For more information on inquiry, EL, and the five-step learning cycle, please visit the University of California Science, Technology, and Environmental Literacy Workgroup's Experiential Learning Web site, <http://www.experientiallearning.ucdavis.edu/>.

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R A B B I T S : From the Animal's Point of View ④



Rabbit Disease: What You Need to Know

Subject Overview and Background Information

From a health standpoint, the goal in owning and caring for a rabbit is to maintain the animal at a high level of physical and emotional wellness. Factors relating to this include proper diet, exercise, and stress levels, limited exposure to illness, and provision of uncontaminated water and food and appropriate housing. Common illnesses or health conditions found in rabbits include rabbit snuffles (runny nose, “wet” eyes), ear infections (infected rabbits tend to tilt their head), abscesses (lumps on their body), obesity, and sore hocks (loss of fur at ankles; red, irritated skin).

Even though there are many health conditions and illnesses that can affect rabbits, **prevention** is the single most important course of action, and begins with providing

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your rabbit with appropriate housing and proper nutrition. Appropriate housing means that your rabbit has a food bowl, water dispenser, bedding, toys, and a litter box, but the size of the cage and its construction are important, too. A general rule to follow is that “bigger is better”: the cage needs to be at least four times as big as the rabbit. Cages with wire floors are not recommended unless there is also an additional smooth surface for the rabbit to walk or stand upon. Wire floors tend to be uncomfortable for rabbits, can cause sores on their feet, and can interfere with coprophagy if cecotropes fall through the wire. Furthermore, the condition of a rabbit's home is important. It must be kept clean (a dirty environment invites disease-causing organisms to breed and contaminates the animal's food and water), the temperature needs to be regulated (avoid extremes; rabbits are susceptible to heatstroke and frostbite!), and stress factors (e.g., loud noises) must be kept to a minimum.

As is the case for humans, a nutritious diet helps maintain a rabbit's overall health. Rabbits are herbivores and consume mainly plant matter. This means that, in order to receive all of the nutrients they require for a balanced diet, they must consume a variety of different types of plant matter. Although commercial rabbit pellets are available and do include the nutrients that rabbits need, a general rule to follow in helping maintain a healthy diet for your rabbit

is that *fresh is better* (especially for adult rabbits). A rabbit's unique digestive system requires foods that are high in fiber (e.g., fresh plant matter).

Although rabbits can experience many different health problems and diseases, youth can take an active role in preventing them. One of the most important means of accomplishing this is to establish a daily health care monitoring routine whereby the youth keep a record of their rabbit's physical, emotional, and behavioral characteristics. Health-check indicators that youth can observe include the quality of the feces, the type, degree, and quality of the rabbit's activity level, the appearance of the rabbit's coat, the rabbit's appetite, and the appearance of the rabbit's teeth and gums. If anything looks atypical, consult a veterinarian as soon as possible.

• Concepts and Vocabulary

Direct contact, disease, disease transmission, germs, health care monitoring, illness, indirect contact, preventive health care, prevention of disease

• Life Skills

Communication, contributions to group effort, cooperation, critical thinking, decision making, disease prevention, keeping records, problem solving, sharing, teamwork

• Subject Links

Science, Language Arts

• Overview of Activities

This section begins with the first activity, “*How Fast Can Germs Spread?*” In this activity, youth will be exposed to the concept of disease transmission. By inadvertently spreading glitter from one person to another in a short period of time, youth can see a simple illustration of how germs can be transferred and diseases disseminated! Additionally, this activity stresses the importance of practicing good hygiene. When the youth wash their hands, they see that they can remove the “germs” (glitter).



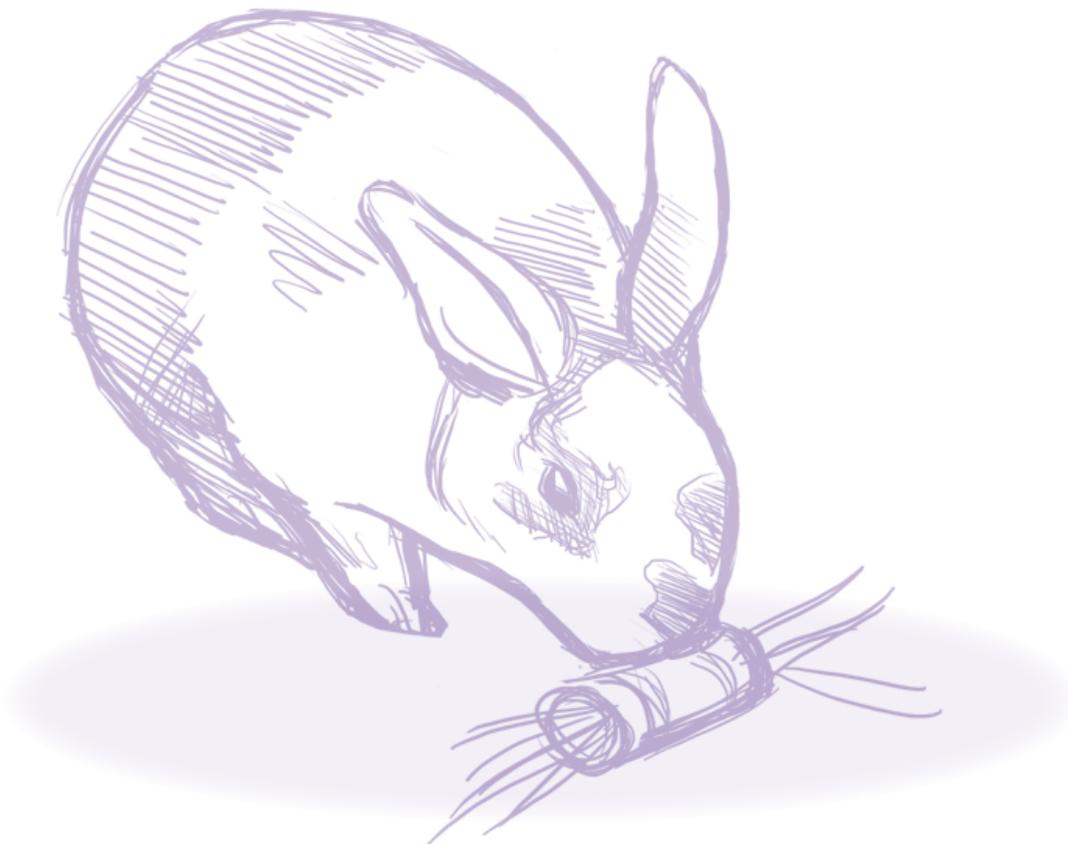
In the second activity, “*Is My Rabbit Sick?*,” youth will have an opportunity to determine which illness their “rabbit” has. Youth will be given a list of observed symptoms and then challenged to identify the exact health problem their rabbit may be experiencing. By providing similar symptoms for two different health problems, the volunteer may be able to demonstrate to the youth that they cannot always positively determine the exact illness on their own, and so demonstrate the importance of professional veterinary care. Disease symptoms can be ambiguous, and it is important that youth know to consult a professional to find out what might be affecting their animal’s health.

In the third activity, “*My Rabbit’s Health*,” youth are separated into small groups. Each group is given five daily journal entries related to a particular rabbit and they are asked to observe and record important health facts. After

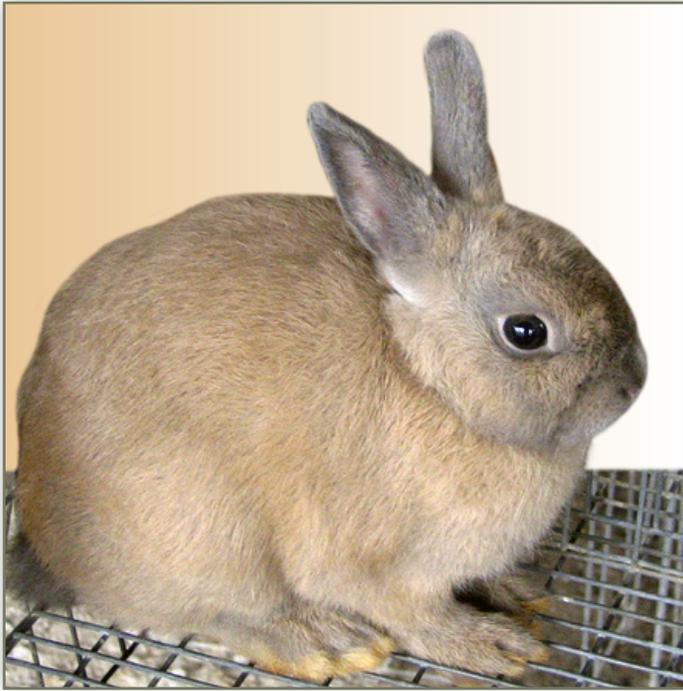
reviewing all five journal entries, they will be given a list of rabbit disease descriptions. Based on their notes, each group will come up with a suggested diagnosis for their rabbit, along with their reasons for reaching this conclusion.

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Facts About Rabbits



DISEASE

• Basic Facts

- Rabbits are very sensitive animals and can become sick very quickly. For this reason it is important to seek veterinary care immediately if anything seems out of the ordinary with your rabbit.
- It is important to observe and check your rabbit daily. By becoming more familiar with your rabbit and its behavior, you will make it easier to tell if something is wrong.
- Common signs of problems may include failure to eat or drink, diarrhea or loose stools, discharge from the nose or eyes, lethargy (tiredness), decrease in droppings or imbedded hair in droppings, or any abnormal behavior.
- Many health problems that occur with rabbits are due to poor diet, lack of cleanliness, or improper handling that may result in injuries to the rabbit.
- A rabbit should be able to live a long and happy life if it has good veterinary care, good husbandry, a clean environment, and a healthy diet.

• Handling and Restraint

- Rabbits are very delicate creatures so it is very important that you know how to handle a rabbit in a way that does not cause any harm or injuries. Improper handling can result in life-threatening injuries to a rabbit.
- A rabbit's spine is extremely fragile. Back injuries most often occur when rabbits are dropped or improperly picked up or restrained. When a rabbit becomes frightened, it will struggle violently, using its strong back legs to try to break free. Holding a rabbit improperly while the rabbit tries to free itself can cause the rabbit to overextend the lower back region of its spine, leading to fractures and dislocations. Because of this, when handling a rabbit, you should never try to overpower it.
- Signs of back injury may include lack of coordination, uncontrolled urine-soiling and defecation, or in the most serious cases, paralysis of the rear legs. Any rabbit exhibiting any of these signs should be examined by a veterinarian at once.
- Speaking softly while approaching a rabbit can help keep it calm when you know you will need to restrain it.
- Covering the rabbit's eyes and lightly stroking its body will often cause the rabbit to enter a trance-like state. A rabbit in this condition will be more relaxed and less prone to panic and injury.
- Rabbits' ears have a very complex system of blood vessels that are involved in heat regulation and sound gathering. A rabbit should NEVER be picked up by its ears, nor should its ears be held as a means of restraint. Also, never hold a rabbit by its limbs or tail.
- It is important to know how to properly handle and restrain a rabbit. However, as an owner you should know your rabbit's own personality. Some rabbits do not like to be picked up. Practice picking your rabbit up and setting it down to build your confidence get the rabbit used to being picked up. By rewarding a rabbit after it is picked up, you can help decrease its fear of being picked up.

- When holding a rabbit, hold it close to you. Rabbits are unpredictable; they may kick or struggle at any moment, so be prepared! If you have a secure grasp of your rabbit and it begins to struggle, hug it gently to your body. This will protect both you and the rabbit. If you don't have a good grasp, get close to the ground (since jumping from an unsafe height could hurt the rabbit) and let the rabbit go safely on the ground.
- Important tips on picking up and carrying a rabbit include:
 - » *Approach your rabbit slowly and quietly to avoid startling it.*
 - » *Grip the loose skin over your rabbit's shoulder firmly but gently with one hand, and place the other hand under the rabbit's rump as you lift it. This will help support its weight.*
 - » *Hold your rabbit upright and carry it in front of you and close to your body.*

• Housing Considerations

- The availability of clean, well-managed housing for rabbits will help minimize the potential for disease and make the rabbit more comfortable.
- Rabbits can be housed either indoors or outdoors.
- **Indoors:** Indoor rabbits should be confined to an enclosure such as a wire cage that provides enough room for the rabbit to move around. The floor should be partly covered with Plexiglas or washable towels. This will help give rabbit's paws relief from constant contact with the wire floor and help prevent diseases such as sore hocks.
 - » *A water bottle or ceramic water bowl, food dish, and litter box should be within the enclosure.*
 - » *Owners should make sure that their rabbit is not let out of its enclosure. Rabbits love to chew, and they can damage household items. They can also injure themselves if they bite telephone or electrical cords.*
- **Outdoors:** Rabbits kept outdoors should have a roomy wire cage with Plexiglas covering part of the floor. A water bottle or ceramic water bowl and a food dish should be provided.
 - » *Adequate cover should be provided for outdoor rabbits to prevent heat stress or heat stroke in hot weather or exposure in cold weather.*

» *A hiding spot should also be provided for outdoor rabbits so they have a place to retreat when they feel threatened.*

• Common Diseases

- **Snuffles:** This disease is one of the most common illnesses in rabbits. Also called Pasteurellosis, it is caused by bacteria that are transmitted from doe to litter or between breeding rabbits. The most common problem caused by snuffles is a respiratory condition, although the nose, eyes, and other areas of the body can also be affected. This disease can become chronic or lead to death if untreated or improperly treated. Pasteurellosis can be a problem in rabbitries (places where rabbits are raised or kept), so it is important that any owner who obtains a rabbit from a rabbitry have it examined by a veterinarian promptly after purchase.
- **Cold:** Like a human cold, a cold in rabbits is a general term used to describe such symptoms as runny nose, runny eyes, and sneezing. Unlike a human cold, however, rabbit colds are caused by bacteria rather than viruses, so they can be treated with antibiotics. Veterinary care is recommended for a rabbit with a cold because some bacterial infections may lead to a much more serious respiratory illness, **rabbit pneumonia**, which in turn can lead to death.
- **Internal bacterial infections:** A variety of different bacteria can cause internal infections in rabbits. Affected rabbits may show a wide variety of signs because multiple organs (liver, kidney, intestinal tract, brain, etc.) may be involved. Symptoms of internal bacterial infection include (but are not limited to) sneezing, coughing, and changes in behavior and appetite. Bacterial infections can also affect the ears, causing ear infections that can lead to a condition called torticollis or **wryneck** (twisting of the neck), head shaking, head scratching, or loss of balance. If you suspect that your rabbit may be ill due to an internal bacterial infection, promptly consult with your veterinarian.
- **Ringworm:** Ringworm is a fungal condition that is transmitted easily through contact with an infected rabbit's coat or living quarters. It usually causes multiple hairless areas with slightly reddened skin

around the head, ears, and forelimbs. These hairless areas are often covered with a slight or sometimes heavy crust. Ringworm can be transmitted to people, so it is extremely important that you consult your veterinarian regarding proper treatment and handling of a rabbit with this condition. In addition, spores from the ringworm fungus can live in an animal's environment for more than 18 months, so anything that an infected rabbit has come into contact with should be properly disinfected.

- **Ear mite infestation (ear canker, ear mange):** Ear mites are external parasites that cause a buildup of a brown crusty material near the rabbit's ear canal. The area usually becomes very raw and irritated. In severe cases, sores may spread to other areas of the rabbit's head.
- ***Cheyletiella mangel* ("walking dandruff"):** This parasitic infestation of the skin, also caused by mites, often goes unnoticed by owners, especially during its early stages. If the condition worsens, however, there will be an accumulation of what looks like dandruff within the rabbit's fur and the animal may lose clumps of hair. On close inspection of an infested rabbit, the owner might notice movement of the "dandruff" on the skin. This movement is caused by the mites as they move around under the dandruff scales on the skin. Rabbits that are infested may or may not exhibit increased scratching. Transmission can be from either direct contact with an infested rabbit (actual physical contact) or from indirect contact (contact with things the infested rabbit has touched).
- **Flea infestation:** Fleas are external parasites that can infest pet rabbits. You can use a flea comb to reveal the presence of the parasites or their waste products (tiny clumps of dried blood known as *flea dirt*). Fleas feed on blood and can cause anemia if present in large numbers. Over-the-counter flea control treatments and special soaps are available to treat a flea infestation; however, it is recommended that you first consult a veterinarian.

- **Coccidiosis:** Coccidiosis is a parasitic illness caused by a *protozoan* (a one-celled organism) that affects the rabbit's liver or intestines. Rabbits can become infected if they consume food or water that is contaminated with feces from an infected rabbit. If coccidiosis infects the liver, the rabbit may exhibit a loss of appetite, diarrhea, and even death. If located in the intestines, symptoms include weight loss, soft or watery feces, mucus or blood in feces, a soiled anal area, dehydration, increased thirst, and possibly death. Occasionally, this parasite may also infect the nasal passages and cause a respiratory disease called **nasal coccidiosis**.

• Common Non-Infectious Conditions

- **Abscesses:** An abscess is a collection of pus that may form at the site of a bacterial or parasitic infection. In rabbits, abscesses often form at the site of a wound that has gone untreated. Abscesses should be treated by a veterinarian.
- **Hairballs:** Rabbits groom themselves by licking their fur and they will swallow hair in the process. As a result, they can develop hairballs in their stomach. Unfortunately, a rabbit cannot cough up a hairball, so it will remain in the stomach and can grow to a significant size. Initial signs of a hairball problem include a rabbit's unwillingness to eat pellets and preference to eat more greens and treats. Later signs include a loss of appetite, smaller fecal pellets or no fecal pellets passing, weakness, weight loss, and eventually death from starvation. Surgery is often necessary to remove hairballs. To help prevent hairballs, brush your rabbit's fur daily. In some cases you may also need to use intestinal lubricants (ask your veterinarian about these).
- **Sore hocks:** Sore hocks are infected wounds that develop on the bottom of a rabbit's feet. Sore hocks can be caused by frequent thumping of the rear feet when frightened, excessive body weight, lack of movement, pressure or abrasions from improper cage flooring, or chronic contact with soiled bedding. Seek veterinary advice if you observe wounds on the bottom of your rabbit's feet or if your rabbit has difficulty standing still

on the wire floor of its cage. You can help prevent sore hocks by providing a smooth surface for your rabbit to stand on in its cage and keeping its cage clean and dry.

- **Malocclusion (wolf or buck teeth; dental disease):** Malocclusion is the improper alignment of a rabbit's teeth brought on by abnormal tooth growth and wear. It usually results in overgrown teeth, particularly the incisors. Rabbits' teeth grow continuously, and it is very important that they eat hard foods in order to maintain a perfect bite. Signs of malocclusion include a rabbit's failure to chew or swallow food properly and heavy salivation. Malocclusion will prevent the rabbit from eating because the teeth will grow so long that they lose the ability to chew.
- **Overgrown claws:** Overgrown claws can hurt both a rabbit and its owner. They can easily become caught in objects such as cage flooring or your clothing, causing pain to the rabbit, or a panicked rabbit can scratch and injure itself. It is important to have a rabbit's claws clipped by someone who is very knowledgeable. Declawing of rabbits is NOT recommended.
- **Heat stress (heat stroke):** Rabbits can get heat stroke if they are in an environment above 85°F or if they are exposed to a combination of high heat and high humidity. Rabbits can also experience heat stroke if there is inadequate shade or ventilation. Housing many rabbits together can also contribute to heat stress. Signs of heat stroke include excessive panting and salivation, ears turning red, weakness, and refusal to move. Heat stroke can cause death. However, you can successfully treat it if you recognize it early. Adequate shade from the sun, proper ventilation, and an abundance of cool, fresh water can help prevent heat stroke.

- **Muroid enteritis:** This is a type of diarrhea that is influenced by nutrition. Signs include dehydration, bloating of the abdomen, and a jelly-like secretion in the feces. Rabbits with severe enteritis produce a sloshing noise in the stomach when shaken. Stress and overcrowded areas play a major part in triggering outbreaks. To help prevent this condition, provide a feed that is high in fiber and low in protein along with regular feedings of long-stem hay. Discuss rations with your veterinarian.

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ACTIVITY 1



How Fast Can Germs Spread?

Background Information

Germs are tiny organisms that can cause disease. They are generally spread by **direct contact** with an infected animal (i.e., touching the animal) or **indirect contact** with an object (e.g., food dish, water bottle or bowl) that an infected animal has used. Most germs are spread through the air via sneezes or coughs, but they can also be spread through sweat, saliva, and blood. However, germs are everywhere. Germs that infect humans can adhere to objects (e.g., doorknobs, money) and body parts (e.g., hands), and can be spread when an uninfected person touches something that is contaminated (e.g., shaking hands). This is why good sanitation (in this case, hand washing) is important in the prevention of disease.

• Time Required

25 to 40 minutes

• Concepts and Vocabulary

Direct contact. The transmission of a disease from one animal to another through physical contact (e.g., touching).

Disease transmission. The transfer of disease-causing agents (pathogens) from one organism to another through direct contact or indirect contact.

Germ. A microorganism that has the potential to cause illness or diseases.

Indirect contact. The transmission of a disease from one animal to another by coming into contact with an object (e.g., water trough, feeders) that was contaminated by a diseased animal or when germs are spread through the air.

Preventive health care. Methods that include observations, vaccinations, examinations, and screening tests that help to prevent disease and prolong life.

• Life Skills

Communication, cooperation, disease prevention, problem solving, sharing

• Subject Links

Language Arts

• State Content Standards

Language Arts

- Third Grade:
 - » *Speaking Applications – 2.3*
- Fourth Grade:
 - » *Listening and Speaking Strategies – 1.7, 1.8*
- Fifth Grade:
 - » *Listening and Speaking Strategies – 1.5*
- Sixth Grade:
 - » *Listening and Speaking Strategies – 1.5*
 - » *Speaking Applications – 2.5a, 2.5b*

• Materials Needed

(* = Materials provided with curriculum)

- Glitter (3 to 4 different colors are recommended)
- **Rabbit Cards*
- Flip chart paper and writing implements.

• Getting Ready

- Prepare enough *Rabbit Cards* so the volunteer and each youth participant receives one card.
- Put one color of glitter in different places in the room on the floor.

- Put another color of glitter on a few of the chairs where the youth will be sitting.
 - » **Volunteer ONLY:** *Put a third color of glitter on your right hand without letting anyone notice. Do this only after you have passed the rabbit cards out to the youth.*

Opening Questions

1. **What are some ways you can tell if you are sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What are some ways you might be able to tell if a rabbit is sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What do you know about different ways you can get sick? What do you know about different ways a rabbit might get sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. **What are some ways that you think diseases can be spread from one human to another? From one rabbit to another?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

1. Provide each youth with a *Rabbit Card*.
 - » **Volunteer tip:** *Discuss these rules for this game with the youth:*
Have everyone pretend to be the rabbit on the rabbit card they have. The volunteer and the youth move around the room shaking hands with other “rabbits” and introducing themselves by name and breed and sharing the fun facts about themselves that they find on their rabbit cards. The goal of the game is to shake hands with several other “rabbits,” but not all of them. Additionally, youth should learn the names of a few other rabbit breeds and something interesting about them.

2. The “Volunteer Rabbit” will start the game by introducing himself or herself to one “youth rabbit,” and proceed from there.

Sharing, Processing, and Generalizing

Follow the lines of thinking developed by the youth as they share and compare their thoughts and observations; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include

1. **What did you learn about different breeds of rabbit?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What do you know about disease or illness prevention?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **Please look at your hands. What do you notice about them? Please explain.** Have them try to associate the glitter with germs. Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. **Please look at your feet and clothes. What do you notice about them? Please explain.** Have them try to associate the glitter with germs. Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
5. **Have them share what happened during the activity. What did you learn about spreading germs? Where did the “germs” come from? Does anyone know how they got the “germs”?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

6. **How do you think this might relate to getting sick or staying well? What did you learn about becoming sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
7. At the end of discussion, have the youth wash their hands with soap to get rid of the “germs.”

Concept and Term Introduction

At this point, volunteers need to ensure that the concepts and terms **direct contact, disease prevention, disease transmission, germs, indirect contact, and prevention of disease** have been introduced. (**Note:** The goal is to have the youth develop these concepts through their own exploration and define the terms using their own words.)

Concept Application

- Ask youth to think of things they could do at home (e.g., washing their hands, wiping down counter tops, cleaning door handles) that would help reduce the risk of contracting and spreading diseases.
- Ask youth to consider ways to reduce the risk of their animal (4-H project animal or pet) from contracting and spreading diseases (e.g., clean food and water bowls).

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- The American Rabbit Breeders Association, Inc. Arba.net. <http://www.arba.net/Breeds.htm>.
- Centers for Disease Control, National Center for Health Education. Disease prevention and immunization. Cdc.gov. <http://www.nche.org/ParentsDisease.pdf>
- Mount Sinai Hospital, Department of Microbiology. Methods of disease transmission. Mtsinai.on.ca. <http://microbiology.mtsinai.on.ca/faq/transmission.shtml>.
- Rabbit Breeds. Give us a home. Giveusahome.co.uk. <http://www.giveusahome.co.uk/small/breeds/rabbit.htm>.



Rabbit Cards

Print one-sided and cut out along dashed lines.

Name: Fuzz

Breed: American Fuzzy Lop

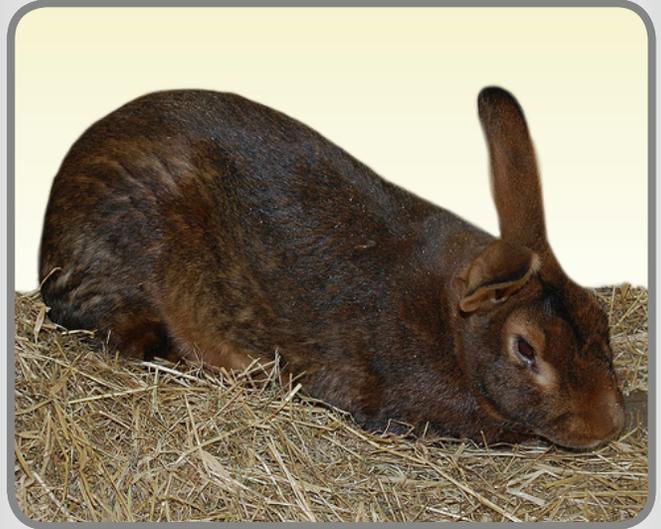
Facts: Also known as Fuzzy Lop, Fuzzy or AFL, they have a long coat so they need to be groomed at least once a week as adults.



Name: Donald

Breed: Belgian Hare

Facts: They attract a lot of attention because of their unique build and attractive chestnut color.



Name: Katie

Breed: Beveren

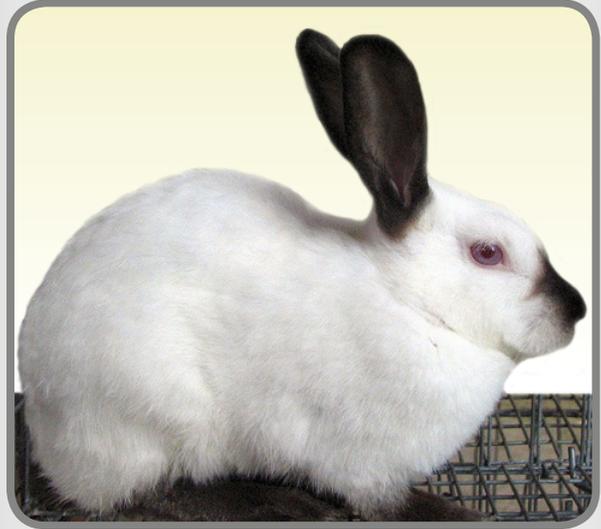
Facts: This breed was originated in Beveren, Belgium. Some colors include black, blue, and blue-eyed white.



Name: Mary

Breed: Californian

Facts: The color of this breed is all white with black, chocolate, blue, or lilac nose, ears, feet, and tail.



Print one-sided and cut out along dashed lines.

Name: Ronald

Breed: Checkered Giant

Facts: The Checkered Giant is considered a show rabbit rather than a meat rabbit.



Name: Erik

Breed: Crème d'Argent

Facts: The color of the coat is orange and the top color is creamy white interspersed with long, orange hairs.



Name: Dan

Breed: Dutch

Facts: Originated in Holland and is one of the oldest breeds, first recorded in the fifteenth century.



Name: Annie

Breed: Dwarf Hotot

Facts: Like the Hotot, the Dwarf Hotot is short and compact with erect, slightly rounded ears.



Print one-sided and cut out along dashed lines.

Name: Jenny

Breed: English Lop

Facts: The English Lop is the most popular lop. There is a limited variety of colors, with the most popular being sooty fawn. Others are black, fawn, and marked varieties of these colors.



Name: Jeff

Breed: English Spot

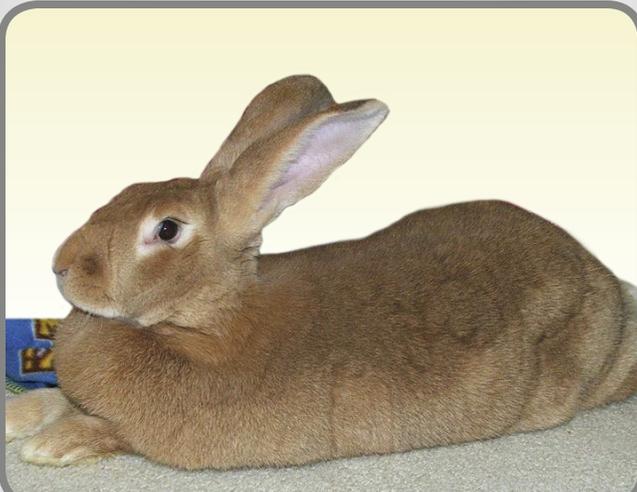
Facts: English Spots have been bred in England since the 1880s. This breed is mostly white, with coloring on the nose, ears, and around the eyes, and chains of colored spots along its sides.



Name: Happy

Breed: Flemish Giant

Facts: The original Flemish Giant was about 14 lb and of a dirty iron grey color, with sandy or white bars on the legs and long ears with bent tips.



Name: Pearl

Breed: Florida White

Facts: This breed was originally created in Florida in the 1960s as a small meat rabbit and white laboratory rabbit.



Print one-sided and cut out along dashed lines.

Name: Larry

Breed: Giant Angora

Facts: The Giant Angora is larger than other varieties of Angora, having been created to be an efficient wool rabbit on economical feed and housing. They are known for being very gentle.



Name: Floppy

Breed: Harlequin

Facts: The name Harlequin refers to the color pattern of this breed of rabbit. The ideal Harlequin has two colors on the face and ears, one on each side. The Japanese Harlequin has orange on one side of the face and black, blue, chocolate, or lilac on the other side; the Magpie Harlequin has white on one side of the face with black, blue, chocolate, or lilac on the opposite side.



Name: Havana

Breed: Havana

Facts: This breed has a rich chocolate brown pelt and rich, ruby-eyed glow of the eye. Although the eyes should be the same color as the body, they appear ruby red in a darkened room.



Name: Jay

Breed: Himalayan

Facts: The Himalayan has a long, narrow body and a short, white coat with chocolate, black, blue, or lilac points.



Print one-sided and cut out along dashed lines.

Name: George

Breed: Holland Lop

Facts: The Holland Lop is heavily muscled, short coupled, compact, and well balanced in length, width, and depth. The head appears very big for the body, sitting high on the shoulders and close to the shoulders, showing no neck.



Name: Becky

Breed: Blanc de Hotot

Facts: This breed came from Hotot-en-Auge, Normandy. Madam E. Bernhard, the rabbit breeder, created this breed because she wanted a white rabbit with black eyes for many uses: meat, fur, and show. It was a very long and hard process to develop this breed.



Name: Jack

Breed: Jersey Woolly

Facts: The Jersey Woolly is also known as the Dwarf Angora. It has a short, compact body, weighs about 3 lb, has a squarish head, and has easy-care wool fur on its body.



Name: Lilac

Breed: Lilac

Facts: Lilac has dense, silky fur, evenly colored throughout in a pinkish dove shade.



Print one-sided and cut out along dashed lines.

Name: Jerry

Breed: Mini Lop

Facts: The main characteristics of this type of rabbit are its robust body, blocky head, floppy ears, and long, thick hair.



Name: Arnold

Breed: Mini Rex

Facts: The main feature of this rabbit is its very beautiful, very soft fur. It feels just like velvet. It is sometime called the “velveteen” rabbit.



Name: Baby

Breed: Netherland Dwarf

Facts: This breed is known for its bad temper, especially among bucks, the adult dwarf doe is very passive and makes for a wonderful pet.



Name: Charlie

Breed: New Zealand

Facts: Coat colors include white, red, and black. However, white is the most common color and was first bred in the United States for commercial purposes.



Print one-sided and cut out along dashed lines.

Name: Midnight

Breed: Polish

Facts: Polish rabbits were the original dwarf rabbit. The red-eyed white is the most common type. It is a common exhibition breed.



Name: Spot

Breed: Rhinelander

Facts: The Rhinelander is a German breed that is a common meat rabbit. Rhinelanders are characterized by their soft, silky coat with tri-color markings and a face marking of black and yellow in butterfly pattern.



Name: Savannah

Breed: Satin Angora

Facts: The Satin Angora has no wool growing on its face, ears, or feet. It is also easy to groom compared to the English Angora.



Name: Martin

Breed: Silver Marten

Facts: The Silver Marten rabbits were developed in the United States from the Chinchilla rabbit. Chinchilla rabbit breeders were reporting "strange little black rabbits" in their litters. These little black rabbits were bred and eventually developed into the Silver Martens that we see today.



Print one-sided and cut out along dashed lines.

Name: Allison

Breed: American Sable

Facts: The American Sable is unique for its coat color. It has a red glow in its eyes, its fur is soft, and its body is round.



Name: Brittan

Breed: Britannia Petite

Facts: Britannia Petites are easily stressed. They are very curious animals and need toys and human interaction to keep them from getting bored.



ACTIVITY 2



Is My Rabbit Sick?

Background Information

Often when a rabbit is sick, it will exhibit few obvious signs or symptoms. Although this seems to be an advantage for wild rabbits (since it makes it harder for a predator to identify the weaker animal in a group), it is a disadvantage for domesticated rabbits because it is difficult for a caretaker to detect potential health problems. However, through close observation, you may be able to notice slight changes in your rabbit's behavior or appearance that may indicate the need for veterinary care. These changes might include (1) your animal hiding in an unusual place in its cage or in your home; (2) a change in your rabbit's posture (e.g., hunched position); or (3) your rabbit's refusal of a favorite treat. Be alert for signs like this that might indicate a potential problem!

If or when a health problem arises with your rabbit, you need to make a thorough evaluation of its environment (e.g., housing), its diet, and its history (e.g., age, medical records). Because the origin of a disease is not always easy to identify, the more information you can provide your veterinarian, the better. By doing this, you will help ensure that your rabbit receives the proper treatment and has the best chance for a full recovery.

• Time Required

40 to 60 minutes

• Concepts and Vocabulary

Preventive health care. Methods that include observations, vaccinations, examinations, and screening tests that help to prevent disease and prolong life.

• Life Skills

Critical thinking, decision making, disease prevention, keeping records, problem solving, sharing

• Subject Links

Language Arts

• State Content Standards

Language Arts

- Fourth Grade:
 - » *Listening and Speaking Strategies – 1.7, 1.8*
- Fifth Grade:
 - » *Listening and Speaking Strategies – 1.5*
- Sixth Grade:
 - » *Listening and Speaking Strategies – 1.5*
 - » *Speaking Applications – 2.5a, 2.5b*

• Suggested Grouping

Individuals or pairs

• Materials Needed

(* = Materials provided with curriculum)

- Seven tables with 3 to 5 chairs each (enough chairs to accommodate the entire group; one chair per child)
- One CD or cassette player; one music CD or tape
- One die (from a pair of dice)
- * *Rabbit Characteristic Cards*
- * *Rabbit Illness Cards*
- * *Veterinary Procedure Cards*
- * *Health Care Log* (blank form)
- Three containers (e.g., large bowls; paper bags)
- Flip chart paper
- Markers
- Tape

• Getting Ready

- Organize the tables (with chairs) around the room so the youth can move freely between them.
- Using a piece of paper and a marker, randomly assign a number (from 1 to 6) to each of the tables.
- Place the seventh table off to the side of the room (in a corner or against the wall) and label it “Veterinary Hospital.”
- Cut out the *Rabbit Characteristic Cards* and place them in one container.
- Cut out the *Rabbit Characteristic Cards* and place them in a second container.
- Cut out the *Veterinary Procedure Cards* and place them in a third container on the “Veterinary Hospital” table.

Opening Questions

Working in small groups, ask the youth the following:

- 1. What do you think are some things that humans can do to avoid getting sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
- 2. How do you think some of the things listed in the previous question can also be applied to rabbits to help them remain healthy?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

- 1.** Have each individual or pair choose one *Rabbit Characteristic Card* randomly from the container. This represents their rabbit for this activity.

- 2.** Explain to the youth that they are going to play a modified game of “Musical Chairs,” but without removing any chairs. They are to move around the room and between the tables while the music is playing; when the music stops, they are to find a chair and sit down.
- 3.** The volunteer then rolls the die and announces the number (from 1 to 6) that has been rolled.
- 4.** The volunteer now draws one of the *Rabbit Illness Cards* out of the bowl. Explain to the youth that one of the rabbits at that numbered table has this illness and some of the others may contract the disease, depending on the rabbits’ health and environment.
- 5.** The volunteer reads the information on the *Rabbit Illness Card* that he or she has drawn. The youth at that numbered table read their *Rabbit Characteristic Cards* and determine whether their rabbits will contract the disease or not. Those youth whose rabbits contract the illness must relocate to the Veterinary Hospital table; those whose rabbits do not become ill should remain at their table and play the next round of “Musical Chairs.”
- 6.** At the Veterinary Hospital table, each youth draws one *Veterinary Procedure Card* prior to the start of the next round of “Musical Chairs.” If the card contains the appropriate information to cure the rabbit, the youth place the card back into the container and return to their numbered table to play the next round; if not, they place the card back into the container and wait to draw another *Veterinary Procedure Card* at the end of the next round.
- 7.** Continue playing the game until the volunteer has used all of the *Rabbit Illness Cards*.
- 8.** The game can be repeated if desired.

Sharing, Processing, and Generalizing

Review all of the rabbit illnesses that have just been introduced to see what the youth have remembered and understood. Then follow the lines of thinking developed through general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include

1. **What did you learn about rabbit illnesses from this activity? Please explain.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What were some common factors that caused the spread of disease?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **What are some ways that one could slow diseases down or stop them from spreading?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. **If you had a friend who wanted to get a rabbit, what are some things you would tell him or her that would help them keep the rabbit healthy and happy?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Concept and Term Discovery/Introduction

At this point, volunteers need to ensure that the **preventive health care** has been introduced or discovered by the youth. (**Note:** The goal is to have the youth discover the concepts and terms on their own. It helps if they can define terms and concepts using their own words.)

Concept Application

- For youth who own their own rabbits, develop a health care log that includes:
 - » *Dietary monitoring (e.g., type of food, amount of food, feeding schedule).*
 - » *Observations of behavior.*
 - » *Observations of appearance.*
 - » *Veterinary updates (e.g., dates of check-ups, dates of vaccines). See sample Health Care Log provided in the materials for this activity.*
- Ask the youth to discuss their *Health Care Logs* with each other and share ideas.
- For youth who do not own rabbits, have them develop a *Health Care Log* for another household pet that they may own.

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- Ashleigh Vet Clinic. Vaccinations: Rabbits. Ashleighvetclinic.co.uk. <http://www.ashleighvetclinic.com/vaccinations.htm#rabbitanc>
- Brown, Susan. Small mammal health series: Overview of common rabbit diseases. VeterinaryPartner.com. <http://www.veterinarypartner.com/Content.plx?P=A&A=471&S=1&SourceID=43>.
- Essortment. 2002. Common rabbit diseases. Essortment.com. http://www.essortment.com/rabbitsdiseases_rqlb.htm.
- Krepmpels, D. Detecting illness before it's an emergency. Bio. miami.edu. <http://www.bio.miami.edu/hare/sickbun.html>.
- Woerpel, R., and W. Rosskopf. 1991. Avian-exotic animal care guides. Goleta, CA: American Veterinary Publications.

Rabbit Characteristic Cards

Print one-sided and cut out along dashed lines.

Rabbit Name: Buster
Age: Young rabbit
Cage: Clean cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Mike
Age: Older rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Alex
Age: Young rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Bugs
Age: Older rabbit
Cage: Clean cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Wilbur
Age: Young rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Matilda
Age: Older rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Thumper
Age: Young rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Annie
Age: Older rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Hopper
Age: Young rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Flopsy
Age: Older rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Cleo
Age: Young rabbit
Cage: Clean cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Springs
Age: Older rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Elmer
Age: Young rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Dottie
Age: Older rabbit
Cage: Clean cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Carrot
Age: Young rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Print one-sided and cut out along dashed lines.

Rabbit Name: Andy
Age: Older rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides proper temperature regulation

Rabbit Name: Houdini
Age: Older rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Bailey
Age: Older rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Zorro
Age: Young rabbit
Cage: Clean cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Callahan
Age: Young rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Blinkey
Age: Young rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Duke
Age: Older rabbit
Cage: Clean cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Peter
Age: Older rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Cisco
Age: Older rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Daisy
Age: Young rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Betty
Age: Young rabbit
Cage: Clean cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Coffee
Age: Young rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Encore
Age: Older rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Fluffy
Age: Older rabbit
Cage: Clean cage
Diet: Proper diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Dandelion
Age: Older rabbit
Cage: Dirty cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Merlin
Age: Young rabbit
Cage: Dirty cage
Diet: Proper diet
Stress: High stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Name: Amber
Age: Young rabbit
Cage: Clean cage
Diet: Inappropriate diet
Stress: Low stress level
Cage Temperature: Cage provides improper temperature regulation

Rabbit Illness Cards

Print one-sided and cut out along dashed lines.

Coccidiosis. This is a distressing disease that rabbits develop after licking dirty feet or coats or by eating and drinking contaminated food and water. It appears in dirty hutches with unchanged bedding and unclean feed and water dishes. The rabbit loses weight and sits in a hunched position with its feet forward. Those with a clean cage will not contract the disease, since they will never be exposed to the dirt that causes it. Those with a dirty cage must proceed to the Veterinary Hospital table.

Ringworm (*bacterial*). Those with a clean cage will not contract this disease because good rabbit hygiene helps the rabbit to avoid getting it or keeps it from spreading, so those with a dirty cage must proceed to the Veterinary Hospital table.

Abscesses. These are lumps that appear suddenly and are caused from fighting and from cuts and wounds sustained from sharp edges on feeders etc. Those with a low stress level and a good diet will not contract the disease, since they will be able to direct all of their energy and nutrients to their immune system and heal the wounds quickly, before they become too large of a problem. Those with a high stress level or a poor diet must proceed to the Veterinary Hospital table.

Canker. Cankers result from small mites that go inside the ear, irritating it until the ear emits a thin discharge, which then forms a crust. The rabbit will shake its head and constantly try to scratch its ear. Those with a clean cage and proper cage temperature will not contract this disease, since a clean cage with a proper temperature will keep mites out of the cage. Those with a dirty cage or improper cage temperature must proceed to the Veterinary Hospital table.

Rabbit dental disease (*malocclusion*). If the crown of a cheek tooth becomes overgrown it can come into contact with either the inside of the cheek or the edge of the tongue, resulting in painful ulcers. These ulcers can be painful enough to cause the pet to stop eating. Those with a low stress level will not contract the disease, since they will be able to direct all of their energy to their immune system and heal the ulcers quickly before they become too large of a problem. Those with a high stress level must proceed to the Veterinary Hospital table.

Hair blockage. A good diet would allow a rabbit to pass the hair, so those with a poor diet must proceed to the Veterinary Hospital table.

Sore hocks (*infection of bottom of foot*). Those with a clean cage will not contract this disease, since good rabbit hygiene helps the rabbit either avoid getting this or keeps it from spreading. Those with a dirty cage must proceed to the Veterinary Hospital table.

Print one-sided and cut out along dashed lines.

Conjunctivitis. This is an inflammation of the eye caused by bucks spraying urine, drafts, ammonia fumes, or a dusty atmosphere. Those with a clean cage and a proper cage temperature will not contract the disease, since these circumstances would not allow the conditions that cause the inflammation to exist. Those with a dirty cage or improper cage temperature must proceed to the Veterinary Hospital table.

Red water. The rabbit gives reddish urine, caused by cold temperatures or feeding on too many greens or carrots. Those with a proper diet and proper cage temperature will not contract this disease, since their cage would never be too cold and they would not be fed too many greens or carrots. Those with inappropriate diet or improper cage temperature must proceed to the Veterinary Hospital table.

Heat stress. A heat-stressed rabbit lies in a prostrate position panting rapidly. Those with proper cage temperature will not contract the disease, since they would never become too hot. Those with improper cage temperature must proceed to the Veterinary Hospital table.

Cold or snuffles. Symptoms are sneezing and a nasal discharge. Rabbits with a low stress level and a proper diet will be able to fight this disease because their immune system will have enough nutrients and energy to function perfectly. Those with a high stress level or inappropriate diet must proceed to the Veterinary Hospital table.

Obesity. Over-fed rabbits are subject to breeding difficulties, and affected animals may become sterile. Rabbits with a proper diet will never become overweight. Those with an inappropriate diet must proceed to the Veterinary Hospital table.

Veterinary Procedure Cards

Print one-sided and cut out along dashed lines.

The vet gives you the proper medication and you follow all of the advice perfectly so your rabbit is cured quickly.

The vet explains what you need to change about your diet and gives you the proper medication and you comply and this cures your rabbit.

The vet explains what you need to change about your rabbit's hygiene and the cleanliness of the cage and in addition gives you the proper medication. You comply and your rabbit is cured.

The vet explains to you what you need to do to maintain a low stress level for your rabbit and gives you the proper medication. You do not comply. Your rabbit is cured temporarily but gets sick again.

The vet explains what you need to do to maintain a low stress level for your rabbit and gives you the proper medication. You comply and your rabbit is cured.

The vet explains to you how to better regulate your rabbit's cage temperature and gives you the proper medication. You comply and your rabbit is cured.

The vet explains what you need to change about your rabbit's diet and gives you the proper medication. You do not comply. Your rabbit is cured temporarily but gets sick again.

The vet explains what you need to change about your rabbit's hygiene and the cleanliness of the cage and gives you the proper medication. You do not comply. Your rabbit is cured temporarily but gets sick again.

The vet explains how to better regulate your rabbit's cage temperature and gives you the proper medication. You do not comply. Your rabbit is cured temporarily but gets sick again.

Date _____

HEALTH CARE LOG

Rabbit Name _____ Breed _____ Gender _____ Age _____

Feeding Behavior _____

General Behavior _____

Coat _____

Skin _____

Eyes _____

Ears _____

Movement _____

Veterinary Updates _____

Other _____

ACTIVITY 3



My Rabbit's Health

Background Information

All animals, including humans, are affected by the foods they eat and by their environment. As humans, we control what domesticated rabbits eat and the environment in which they live, so we need to be observant and aware of our animals in order to help prevent them from contracting **diseases** or **illnesses**. An unhealthy diet or an unsanitary or un-enriched environment (e.g., no toys) can cause rabbits to become ill or depressed. Owners can take care of rabbits by consistently feeding them healthy food, keeping their environment clean, and being constantly aware of their rabbits' condition and behavior.

• Time Required

45 to 60 minutes

• Concepts and Vocabulary

Disease. An abnormal condition that affects the normal function and health of an organism, decreasing the health of that organism.

Health care monitoring. Practices designed to observe and check the health of an animal that are systematic and intentional.

Illness. Being unhealthy and in poor health.

• Life Skills

Teamwork, contributions to group effort, sharing, cooperation, communication, keeping records, critical thinking, problem solving, decision making

• Subject Links

Science, Language Arts

• State Content Standards

Science

- Third Grade:
 - » *Investigation and Experimentation-5e*
- Sixth Grade:
 - » *Investigation and Experimentation-7d*

Language Arts

- Third Grade:
 - » *Reading Comprehension-2.2, 2.6*
- Fourth Grade
 - » *Reading Comprehension-2.3*
 - » *Listening and Speaking Strategies-1.7*
- Fifth Grade:
 - » *Reading Comprehension-2.3, 2.4*
 - » *Listening and Speaking Strategies-1.5*
- Sixth Grade:
 - » *Listening and Speaking Strategies-1.5*
 - » *Speaking Applications-2.5b*

• Suggested Groupings

6 small groups

• Materials Needed

(* = Materials provided with curriculum)

- * *Health Assessment Journals* (6 rabbits)
- * *Rabbit Disease Information*
- * *Health Assessment Summary*
- Flip chart paper
- Markers or other writing implements

Getting Ready

- Divide the youth into small groups of 3 to 5.
- Provide each group with adequate amounts of flip chart paper and markers or writing implements.
- Prepare one set of *Health Assessment Journals* (one rabbit; five journal entries) for each group
- Make one copy of the *Health Assessment Summary* for each group.
- Make enough copies of the *Rabbit Disease Descriptions* so each group has a set.
 - » **Note:** *Distribute the Rabbit Disease Descriptions worksheet at the end of the activity.*

Opening Questions

1. **What are some ways to tell if someone is sick? What are some signs or symptoms that you might notice? Please describe.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What do you know about the ways you get sick? What do you know about the ways animals get sick?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
3. **Animals cannot speak, so they cannot tell us if they are not feeling well. What are some signs or symptoms that would help you to determine if an animal is sick? Please explain.** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

- » **Volunteer Tip:** *Set up the following scenario for the youth:*
Each group represents the owner of a particular rabbit (a different rabbit for each group; provided by the Volunteer). The groups are given daily journal entries of observations they have made about their rabbit. Based on the entries in their journals, their job is to look for important changes in their rabbit's health or behavior that might suggest a health concern.

- » **Volunteer Tip:** *Provide each group the journal entries one day at a time. Do not give them the next day's entry until they have completed their work on the entry from the current day.*

1. Each group of rabbit owners is given Journal Entry 1 from their *Rabbit Disease Journal*. Have each group read their journal entry and record important facts from the journal entry on the *Health Assessment Summary*.
2. Once the groups have finished recording and organizing the information from Journal Entry 1, take away Journal Entry 1 and provide them with the Journal Entry 2. Again, ask them to read their journal entry and record important facts from the journal entry on the *Health Assessment Summary*.
3. Continue this process for Journal Entry 3, Journal Entry 4, and Journal Entry 5.
4. At this point, pass out copies of the *Rabbit Disease Descriptions* and have each group review their *Health Assessment Report* and determine which disease(s) their rabbit might have. Have them write their suggested diagnosis and their basis for reaching this conclusion on their *Health Assessment Summary*. In a real-world situation, they would provide this summary to their veterinarian.

Sharing, Processing, and Generalizing

Ask each group to share the results from their *Health Assessment Summary* and their suspected diagnosis. Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include

1. **When you were reading the journal entries, when did you begin thinking that it would be important to seek the care of a veterinarian?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

» **Volunteer Tip:** *Have each group go back to their journal entries and ask them when they would have taken the rabbit to the veterinarian.*

2. What do you think might happen if you wait too long to seek veterinary care? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

3. What might some of the consequences be if you don't monitor your rabbit's health on a daily basis? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

4. Based on your understanding, what are good signs to indicate that a rabbit is healthy? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

» **Volunteer Tip:** *This is a good time to ask the youth which of the scenarios described a healthy rabbit and what information or data from the journal entries helped them to reach that conclusion.*

Check the suspected diagnosis from each group against the answer key provided below. If the diagnosis is incorrect, ask the youth to review their information and try again. If they do not achieve the correct diagnosis on their second try, discuss why they came up with the conclusion they did and look for inconsistencies in their data and analyses.

Rabbit Disease Diagnosis Key:

- “Bagel” — Dental disease
- “Taco” — Ringworm
- “George” — Canker
- “Rebecca” — Mucoïd enteritis
- “Snowdrop” — Sore hocks
- “Peter” — Normal

Concept and Term Discovery/ Introduction

At this point, volunteers need to ensure that the concept of **health care monitoring** has been introduced or discovered by the youth. (**Note:** The goal is to have the

youth develop concepts through their own exploration and define terms using their own words.)

Concept Application

- Have youth who actually own rabbits write daily observations of their rabbits on the *Health Assessment Report*. Have them share their entries with the other youth on a regular basis.
- Youth who do not own rabbits can use the *Health Assessment Report* to record their observations for a different type of domesticated animal (e.g., a dog or cat) that they may have at home or that a friend or neighbor may have. Have them share these entries with the other youth and compare them with entries for the rabbits. How are they similar? How do they differ?

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Health Assessment Journals

Print one-sided and cut out along dashed lines.



Journal A

Rabbit's name: George

Breed: Angora

Sex: Male

Age: 2 years

Journal A, Entry 1: Today, I came out to play with George and everything seemed fine. I let him out of his cage and he happily hopped around and played with his toys. However, when I checked his cage, it seemed dirtier than usual. I cleaned his cage and supplied him with fresh water. While cleaning his cage, I noticed he ate all his beets but none of his corn.

Rabbit's name: George, **Breed:** Angora, **Sex:** Male, **Age:** 2 years

Journal A, Entry 2: Today, I came out to play with George and noticed him sneezing occasionally. He did not seem very excited to see me and did not seem to hop around as much today. I also noticed that his favorite toy, a green ball, was nowhere to be found. Today was a very hot day so I wanted to make sure he had enough food and water. I noticed he did not eat his beets and corn today. In fact, it looked like there was more food in his food bowl than normal.

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Rabbit's name: George, **Breed:** Angora, **Sex:** Male, **Age:** 2 years

Journal A, Entry 3: When I checked on George today, he seemed a bit livelier. He seemed excited to see me! In fact, he seemed to have found his green ball and was happy playing with it. However, he was constantly sneezing. When I looked at his water and food supply, I noticed he pushed everything to one side of his cage. He did however eat all of his food. I started to play with him and he seemed fine. The only weird thing was that he continually jumped side to side instead of forward and backwards. When I went to pick him up, he let out a big sneeze, which surprised me and caused me to drop George. When I picked him up again and scratched his ear, it seemed to upset him.

Rabbit's name: George, **Breed:** Angora, **Sex:** Male, **Age:** 2 years

Journal A, Entry 4: The first thing I did when I got home from school today was to check George's ears and give him new toys I'd bought for him. When I looked into his ears, they looked powdery brown, a lot like dirt. I just figured it was dirt. I tried playing with him but he seemed very lazy. However, when I showed him his new toys, he seemed really excited. Then, I noticed more discharge (brown substance that dried and turned crusty) between his nose and ears. I also noticed that the fur on one side of his body was really dirty and matted. I think he scratched this area of his body with a dirty paw. I checked his cage and it seemed clean. He ate all his food and water so I had to refill it.

Rabbit's name: George, **Breed:** Angora, **Sex:** Male, **Age:** 2 years

Journal A, Entry 5: Today, I came out to play with George and noticed immediately that he was acting very differently. He would not allow me to come near him. When I picked him up, he would not let me touch his ears. He no longer had any discharge on his face, but I noticed scabs in his ears. He constantly shook his head and scratched his ears. When I put him in his cage and gave him his new toys, he pushed them out and started to mess up his cage. He had not eaten his food. The only thing he would do was scratch his ears. When I tried to take him out, he would hide in a corner of his cage and not move. He had a very scared look on his face.

Print one-sided and cut out along dashed lines.



Journal B

Rabbit's name: Rebecca

Breed: Belgian Hare

Sex: Female

Age: 6 years

Journal B, Entry 1: Today was a very hot day! I brought home a friend who was a foreign exchange student. I told her about Rebecca and she wanted to see and play with her. When she was playing with Rebecca, she accidentally dropped her. She fell a high distance from the ground. I was worried about Rebecca so I put her back in her cage for her to rest. Later that day, while I was cleaning Rebecca's cage, I noticed that she had not eaten much of her food. Her droppings were round and firm. Her behavior seemed normal but her activity level seemed a bit low

Rabbit's name: Rebecca, **Breed:** Belgian Hare, **Sex:** Female, **Age:** 6 years

Journal B, Entry 2: Today was another hot day. Usually, when I take Rebecca out and place her on the ground, she hops out of my hand. Today, when I took her out, she did not move. When I placed her on the ground, she either moved really slowly or just sat still. When I started to pet her, I noticed that her ears seemed very moist. I placed her back into her cage and noticed something strange about her cage. Then I realized that she had torn up all the newspaper in the cage and moved her toys around! When I looked at her droppings, I noticed that they weren't as firm as yesterday. I also noticed that she had not eaten much and that there was fur at the bottom of her cage.

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Rabbit's name: Rebecca, **Breed:** Belgian Hare, **Sex:** Female, **Age:** 6 years

Journal B, Entry 3: I came to check on Rebecca and see if she wanted to play with me. When I came to her cage, she was huddled in the same corner I left her in yesterday. I looked at the cage and saw that it was a mess! I just realized that I forgot to clean it yesterday. I looked at her droppings and some seemed very runny. I changed the food and water, which looked like it had not been touched all day. Because it was a hot day again, after I cleaned the cage, I took Rebecca inside to enjoy the cool air-conditioned house. When inside the house, she seemed very happy, hopping around the living room and playing with her toys. When her play time was about up and as I was about to pick her up, she let out a very loud sneeze, which startled me! I tried to pick her up but she hopped away from me. It took me awhile before I caught her and put her back into the cage.

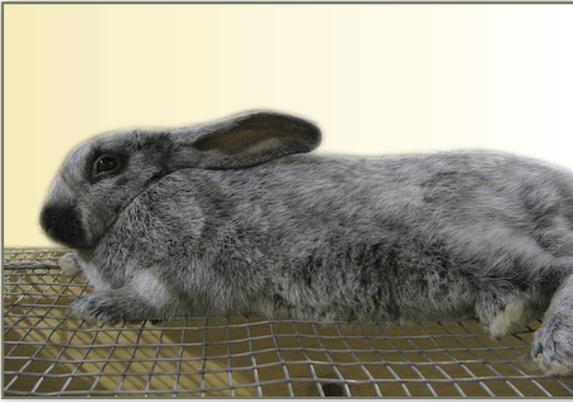
Rabbit's name: Rebecca, **Breed:** Belgian Hare, **Sex:** Female, **Age:** 6 years

Journal B, Entry 4: Today when I came to see Rebecca, she had only moved slightly from the spot where I left her yesterday. I looked at her food bowl and noticed that she had not eaten her pellets but had nibbled on some carrots and corn. I looked at her droppings and noticed that a few were runny. When I went to pick Rebecca up, I noticed a yellow tint on her fur. Her belly also seemed very round and full. When I started to play with her, she started to perk up.

Rabbit's name: Rebecca, **Breed:** Belgian Hare, **Sex:** Female, **Age:** 6 years

Journal B, Entry 5: Today I came to check on Rebecca and noticed that she looked awfully thin but her belly still seemed very round. When I looked at her droppings, they were in the same place I saw them the day before. The droppings looked very runny with a jelly substance in them. She had not eaten the carrots and corn I left for her during breakfast. I tried to pick her up but she wouldn't let me. She wouldn't play with the toys I put in front of her. Overall, she seemed very nervous and frightened.

Print one-sided and cut out along dashed lines.



Journal C

Rabbit's name: Bagel

Breed: American Chinchilla

Sex: Female

Age: 1 year

Journal C, Entry 1: When I came home from school, I let Bagel out and she happily hopped around the house. I noticed that Bagel hadn't eaten any of the carrots, pellets, or apples I left for her before I went to school that morning. I watched her while doing my homework and noticed she eventually ate some soft fruits, such as melon and peaches. I took a closer look at Bagel and saw her eyes seemed very watery and it looked like she had been crying. I looked at the thermometer in the house and noticed that the temperature was a bit higher than yesterday. I looked at her droppings and noticed they were hard and round. I would occasionally see Bagel scratching a small portion of her back with her hind leg, making a loud thumping noise.

Rabbit's name: Bagel, **Breed:** American Chinchilla, **Sex:** Female, **Age:** 1 year

Journal C, Entry 2: When I came to check on Bagel's eye, it no longer seemed very watery. When I let her out of her cage today, she seemed very excited to get out and cheerfully hopped around. As I was preparing for bed, I started to hear a grinding sound coming from Bagel's cage. I decided to check it out. When I got to the cage, I saw Bagel sitting in the back of her cage grinding her teeth. I looked at her food and water and noticed that some alfalfa pellets were in the water bowl and had become very soggy. I cleaned out the water bowl and replaced it with fresh water. I had a hard time falling asleep due to Bagel grinding her teeth.

Print one-sided and cut out along dashed lines.

Rabbit's name: Bagel, **Breed:** American Chinchilla, **Sex:** Female, **Age:** 1 year

Journal C, Entry 3: Today, Bagel didn't eat much but she does occasionally drink water. When I first saw her, there was a lot of drool coming from her mouth. There was also a clear liquid coming out of her nose. When I pet her fur, it was still fluffy. Her temperature seemed fine. She seemed uninterested with her favorite chew toys. Bagel still hopped around the house but she would hide under tables and chairs. I checked her litter box and noticed that there were fewer droppings than yesterday.

Rabbit's name: Bagel, **Breed:** American Chinchilla, **Sex:** Female, **Age:** 1 year

Journal C, Entry 4: When I went to pick up Bagel today, she started struggling really hard. I didn't have a good grasp on her but held her tightly and close to my body until she stopped struggling. I noticed her eyes were tearing up and appeared to be bulging out of her eye sockets. Her nose started to run with a clear liquid coming out. She seemed almost motionless or lazy, eating only the peaches in her food bowl. I checked the thermometer in the house and noticed it was a lot warmer than the previous days so I turned on the air conditioning. There are a few droppings in her litter box and they were round and hard. When observing Bagel, I noticed her head was tilted at an angle and she would occasionally shake it from side to side.

Rabbit's name: Bagel, **Breed:** American Chinchilla, **Sex:** Female, **Age:** 1 year

Journal C, Entry 5: It was a little warmer in the house today compared to yesterday. Bagel acted about the same today as she had during the previous four days. She looked very weak and tired, and wouldn't stop grinding her teeth. She looked teary-eyed, was drooling, and had a runny nose. Throughout the entire week her droppings and urine appeared normal. As I fed Bagel a peach, I noticed that the peach had small, bruised areas on it, but Bagel didn't mind and ate the whole thing slowly. I tried to feed her pellets, but for some reason Bagel kept dropping them. The alfalfa pellets felt hard and brittle. In the evening, my mother spilled some tea on the kitchen floor and before I could stop her, Bagel hopped over and drank some of it.

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Journal D

Rabbit's name: Taco

Breed: Palomino

Sex: Male

Age: 2 years

Journal D, Entry 1: Before leaving for soccer practice on Monday, I made sure that Taco had enough food and water. When I approached his cage, I noticed Taco hiding in a corner of the cage, thumping his foot and scratching at his fur. I observed him for the rest of the day and noticed that he was lively and was eating normally. His litter box had round droppings. Throughout the day I heard Taco cough from time to time. I let Taco out into the backyard and observed him hopping in circles. When Taco came back into the house, his fur was all wet. Since it rained last night, he probably just hopped into a puddle.

Rabbit's name: Taco, **Breed:** Palomino, **Sex:** Male, **Age:** 2 years

Journal D, Entry 2: Today, Taco seemed fine except he constantly was scratching his fur. While doing my homework later that day, Taco hopped next to my feet and started to shake his head back and forth. I watched him closely and noticed he was also scratching his ears. When I picked him up, he started to struggle so I bent down to the ground and let him go and waited until he calmed down. Once he calmed down, I picked him up again and looked into his ears but didn't find anything unusual. I checked his food bowl and noticed that he ate most of the vegetables and fruit. He also ate some alfalfa pellets. However, he ignored the cucumbers. Later that night, I gave him a carrot, but he did not want it.

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Rabbit's name: Taco, **Breed:** Palomino, **Sex:** Male, **Age:** 2 years

Journal D, Entry 3: Today I bought Taco new toys and watched him as he chewed and played with them. While playing, Taco continued to scratch his ears, back, and legs. I looked in his cage and noticed it was covered with fur. I looked again at Taco and noticed that there was a lot of fur coming off around his head! I gave him a few treats to make him feel better and noticed that he had the same appetite as before. I checked his litter box again and saw mostly round droppings, but one dropping was abnormally shaped. In the afternoon, I mowed the front lawn and some grass cuttings got stuck on my pants. As I walked into the house, Taco grabbed the grass on my pants and ate it.

Rabbit's name: Taco, **Breed:** Palomino, **Sex:** Male, **Age:** 2 years

Journal D, Entry 4: More patches of fur had fallen off of Taco's body and his skin started getting red in places around his head and legs. Later that day I noticed that entire patches of fur had come off around Taco's head, ears, and legs! Taco was still shaking his head back and forth. When I looked into his ear canal, I still didn't notice anything. Today Taco ate lettuce, some cabbage, and an apple. He also ate some alfalfa pellets, but he only ate half of each pellet, leaving half-eaten pellets all over his cage. As I changed his water bowl, I saw a cloudy substance in it. His cage seemed to be dustier than the last time I cleaned it. At night, it started to rain.

Rabbit's name: Taco, **Breed:** Palomino, **Sex:** Male, **Age:** 2 years

Journal D, Entry 5: When out of his cage, Taco started running in very irregular patterns around the house. Taco's skin looked redder and flakier than the previous days. In the evening, I noticed red spots on my arm that really itched! I then just realized that I forgot to clean Taco's cage last week. So immediately I went to his cage and cleaned out his bedding and litter box and threw out his old round droppings. While cleaning, Taco's cage seemed very wet and produced a weird smell. I then checked the thermostat in the house and it was two degrees colder than yesterday. That night it rained again.

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Journal E

Rabbit's name: Snowdrop

Breed: English Lop

Sex: Female

Age: 5 years

Journal E, Entry 1: Today I came back from my family vacation and noticed that the neighbor forgot to clean Snowdrop's cage or empty her droppings during the ten days that I had been gone. In addition, Snowdrop had no water left in her bowl and it was a very hot day. Which cleaning her cage, I noticed that all of Snowdrop's toys smelled like urine. After I cleaned her cage, I asked my mom to help me clean the feces and urine off Snowdrop. When I went to pick her up, I told my mom to hold her hind legs while I held her front legs. After I cleaned Snowdrop off, I played with her for a long time and she seemed excited to see me. She would start doing tricks such as jumping and rolling on her back, which was very unique. When I put her in her cage, she seemed happy, probably because her cage was now clean and that she now has fresh water and food. She was so cheerful that she started to act silly and chase her tail.

Rabbit's name: Snowdrop, **Breed:** English Lop, **Sex:** Female, **Age:** 5 years

Journal E, Entry 2: Today I rushed home from school with my best friend to show him Snowdrop's new trick. Unfortunately when I took Snowdrop out of her cage, she didn't want to do anything but lie down. I even rolled on my back to see if she would copy me, but she just wanted to lie there. My best friend became uninterested and went home. I continued to try to play with Snowdrop, but she didn't seem to want to. When I put her back in her cage, she tried to sit on her food bowl, tipping the whole thing over. I ended up having to clean her cage again. While cleaning the cage, I noticed her favorite toy was missing. I will try to remember to replace her toy on the way home from school tomorrow.

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Rabbit's name: Snowdrop, **Breed:** English Lop, **Sex:** Female, **Age:** 5 years

Journal E, Entry 3: After I picked up another toy similar to her favorite one, I checked up on her in her cage and noticed that she was lying down on top of her flipped over bowls. Her food and water were everywhere. Looking at what was scattered, I got the idea that she had not eaten any of her food or drunk any of her water, which was very unusual for Snowdrop. I tried to get her to come to me, but after moving a little, she began to shift her weight back and forth between her feet. I picked her up and put her on the concrete. She hurried over to the tall grass and plopped down. She was wiggling her nose and batting at her face much more than usual. Since she didn't seem to want to play, I put her back in her cage and refilled her water and food. I hope she will eat something today.

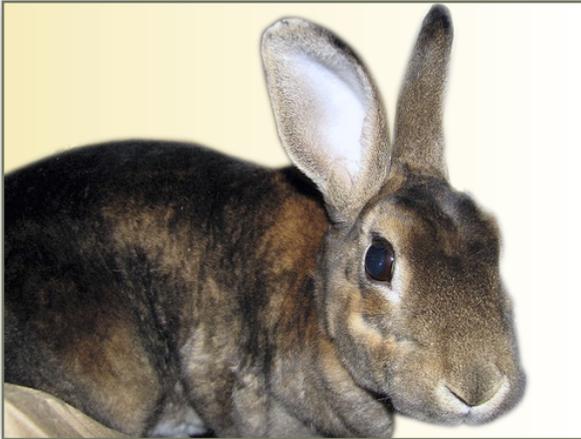
Rabbit's name: Snowdrop, **Breed:** English Lop, **Sex:** Female, **Age:** 5 years

Journal E, Entry 4: Before going to school, I refilled Snowdrop's food and water. Immediately after I had refilled them, she flipped over her bowls and was lying on top of them. So I decided to put another set of bowls in the cage with food and water and headed off to school. When I came home from school, I noticed she had finally eaten all her food except her carrots. I put her outside on the tall grass; she lay there and began licking her paws and washing her face. When I finished petting her, I put her back in her cage. When I looked at the bottom of her feet, I saw that her back feet were red and swollen with a clear liquid coming out of them.

Rabbit's name: Snowdrop, **Breed:** English Lop, **Sex:** Female, **Age:** 5 years

Journal E, Entry 5: Before school, I asked my mom to put food and water in the separate bowls while I checked Snowdrop's feet. They looked the same as the night before but I didn't have any time to treat them because I was late for school. When I got home from school, I checked Snowdrop's feet again and now they looked raw and cut up and were bleeding. I took her inside and washed her feet but this seemed very painful for her. I put a blanket in her cage and put her on it. She lay down immediately and fell asleep.

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Journal F

Rabbit's name: Peter

Breed: Rex

Sex: Male

Age: 3 years

Journal F, Entry 1: *The weather today was sunny most of the day with a few sprinkles in the morning. When I came home from school, I noticed that Peter had eaten all his food. I had to change his water once. I let him out for 3 hours in the backyard and he ran around happily. He played with his favorite orange wooden carrot toy. His droppings were normal: hard, round, and dry. When I checked on him, everything seemed fine. His eyes were clear, his nose was dry and his fur was very shiny. While cooking at night, I dropped a large cooking pot. The noise scared Peter and he hid in the corner of his cage for about an hour but later came out.*

Rabbit's name: Peter, **Breed:** Rex, **Sex:** Male, **Age:** 3 years

Journal F, Entry 2: *There was a big heat wave today. I put small bowls of frozen water in Peter's cage to keep him cool. I had to refill his water bottle three times today. Throughout the day, his droppings were normal and his nose was dry. Around noon, it was over 90°F so I let Peter inside the air-conditioned house. He ate most of his food today, but he left out some of the carrots. There was a puddle of water near the air conditioner and Peter jumped into it, getting himself completely wet. When it was cooler outside, I let him go outside and dry off. When I put him back into his cage, I noticed he had gotten a little dirty.*

Print one-sided and cut out along dashed lines.

Rabbit's name: Peter, **Breed:** Rex, **Sex:** Male, **Age:** 3 years

Journal F, Entry 3: The heat wave passed and today was cloudy and breezy. Even though it was muggy today, it is not as hot as yesterday. I refilled Peter's bottle only two times and he ate all of his food. I had time earlier today to go to the pet shop and I got some of his favorite rabbit treats. Out of the three pieces I put in his bowl, he ate all three that I gave him! His droppings were normal today. In the late afternoon, the neighbor's dog was barking very loudly, which woke Peter up and caused him to hide in a corner. He usually plays with his favorite orange toys everyday, but today he did not.

Rabbit's name: Peter, **Breed:** Rex, **Sex:** Male, **Age:** 3 years

Journal F, Entry 4: Yesterday at the pet store, I bought Peter purple wooden chew toys, but he did not seem to like them. Instead, he played with his favorite orange toys. I let him out in the yard and played with him, chasing him back and forth across the yard. The weather was cloudy but fairly warm. While playing, I noticed he started to scratch his ear. He also started digging holes in the yard, which was a bit unusual. When I put him back in his cage, it looked like he didn't drink much water today. His eyes were clear, his fur was shiny and thick and his droppings were hard, round, and dry. While in his cage, Peter was constantly moving around. It was not until a couple of hours later that he settled down and fell asleep.

Rabbit's name: Peter, **Breed:** Rex, **Sex:** Male, **Age:** 3 years

Journal F, Entry 5: Today, I gave Peter another new toy, a green ball, as well as another orange toy with a bell on the bottom. Peter constantly played with his new toys and started gnawing on his purple chew toys. He ate most of his food today, except he had a few beets left over. My brother wanted to play with Peter and started to take him out by the ears. I stopped my brother because I knew it would hurt Peter. I took him out later, coaxing him with a treat before picking him up properly. I played with him and fed him treats. He only ate 2 treats today. The weather today had a slight drizzle and was fairly cool. When I put him back into the cage, I noticed that his fur got wet.

Rabbit Disease Information

Dental disease (malocclusion) (pronounced “mal-uh-kloo-zhuhn”). As an herbivore, a rabbit has large incisors at the front of the jaw and larger molars in the cheek to break down its food. A rabbit's teeth are constantly growing. By providing a rabbit with the correct diet, you allow it to wear down its teeth and maintain them at a proper length. If the teeth are not worn down properly, dental disease can develop. Dental disease may start in one tooth, but eventually it will affect the entire jaw.

Dental disease occurs when the teeth are not shaped or worn down properly and they come into contact with the rabbit's cheek or tongue, creating sores. These can be so painful that the rabbit will stop eating. Most symptoms of dental disease result from deformed teeth and the infections caused by these deformities.

Rabbit dental disease has many causes. One common cause is the genetically determined shape of the rabbit's jaw. Some rabbits have dental disease naturally from birth and must have their teeth maintained for their entire life. Another cause is injury to the rabbit's jaw area. A broken tooth or jaw can cause the teeth to grow at abnormal angles. A change in the calcium level in a rabbit's body can cause dental disease by weakening the tooth and causing it to shift position. Diet is also a common cause of dental disease when the rabbit does not have enough hard objects to chew, causing its teeth to overgrow.

There are many symptoms of dental disease:

- *Loss of appetite.* Pain from the teeth is a common cause for loss of appetite. Another cause is teeth that have become so long that the rabbit cannot hold the food in its mouth.
- *Being selective about food.* A rabbit with dental disease may only want to eat softer foods, such as fruits, and may avoid harder foods like carrots.
- *Teary eyes.* If some of the teeth are infected due to dental problems, the infection can cause inflammation in the tear duct and block it so no tears will drain from the eyeball. This causes the rabbit to tear up in the eye so that the tears drip down its face.

- *Nasal discharge.* Like teary eyes, nasal discharge means that there is inflammation. In this case the inflammation is in the sinuses and prevents nasal fluids from draining properly.
- *Drooling.* This is caused either by pain or by the rabbit's inability to close its mouth.
- *Excessive teeth grinding.* Rabbits commonly grind their teeth more when they have dental disease.
- *Bulging eyes.* An infection can cause pressure to build up in the eye, making the rabbit's eyeball bulge out.

Frequent monitoring of the rabbit and regular checkups can prevent dental disease. **If dental disease does occur, it is best to take the rabbit to the veterinarian as soon as possible.**

Rabbit cold. Just like humans, rabbits are vulnerable to infections that can cause the common cold. Symptoms are very similar to those of humans:

- Inactivity or laziness
- Teary eyes
- Sneezing
- Runny nose
- Increased temperature (normal body temperature ranges from 101°F to 103°F)
- Coughing
- Loss of appetite

It is important that the eye and nasal discharge be clear and not have any color. If the rabbit has colored discharge, **you must get the rabbit to a veterinarian immediately.** Other infections that can cause a cold can also cause a rabbit's droppings to be abnormal. If droppings are not round and hard or if they look like diarrhea, it is a sure sign that your rabbit has some kind of infection.

Ringworm. Ringworm is a fungus that can cause infections in both rabbits and humans. It spreads by direct skin-to-skin contact.

Like any other fungus, ringworm begins when fungal spores grow in wet areas. Wet bedding or a wet litter box can be great areas for ringworm to grow. Keeping a rabbit's coat and habitat dry are the first and most important steps in preventing a ringworm infection. The symptoms of ringworm include

- Excessive shedding of fur
- Reddish skin
- Patches of hairless areas on the skin, commonly with a crusty surface. The patches of hairless areas are usually on the rabbit's ears, head, and forelimbs.

Since this disease can be spread to humans, **it is very important that the rabbit be taken to the veterinarian as soon as possible.**

Ear mite (ear canker, ear mange). Ear mite infestation in rabbits is a common disease. An ear mite is a very small spider-like creature that infects the ear of a rabbit. The mite only spreads in rabbits, and it is easy to treat if spotted early. However, it is sometimes difficult to detect. The signs of ear mite are

- Rabbit scratching at ear
- Head shaking
- Dark brown crusty, waxy substance in ear canal
- Ear canal red and inflamed



If not treated, an ear mite infestation can lead to other infections, producing symptoms similar to a cold. Prevent ear mite infections by keeping your rabbit's ears clean. Use a commercial ear cleaning solution to remove dirt and foreign matter in the ear. **If anything looks abnormal, seek veterinary help immediately.**

Pasteurellosis (pronounced "pas-tu-re-low-sis"). Pasteurellosis in rabbits is a bacterial illness. The disease is highly contagious and can be transmitted via direct or indirect contact, and the pathogen is one of the most common disease-causing agents in rabbits. The bacteria can be found in the rabbit's nose, lungs, and eye membranes, but they can also spread to other parts of the body. Infections vary in severity and can have different symptoms and signs. Some affected rabbits die with only a few symptoms, while others develop more chronic forms of infection. Symptoms to watch for are

- Depression
- Loss of appetite
- Weight loss
- Difficulty breathing
- Discharge from the nostrils
- Swelling of the tissues around the eyes
- Discharge from the eyes
- Moistened forelimbs from rubbing the eyes and nose
- Abscesses
- Blood in the urine
- Vaginal discharge (females)
- Abortion
- Head shaking
- Head tilt

This disease is persistent in most rabbitries and can be very serious where rabbits are malnourished, live in overcrowded situations, have poor sanitation, experience temperature extremes or inadequate air circulation, or are exposed to other stressful situations. **When purchasing a rabbit, make sure it is thoroughly examined by a veterinarian as soon as possible after purchase.** Antibiotics may eliminate the infection, but if it is chronic it is difficult to eliminate. If a rabbit is infected with this disease, keep it on a good diet and place it in a stress-free environment. Make sure your rabbits are clean and are housed in a well-ventilated area.

Coccidiosis (pronounced “kok-si-dee-oh-sis”).

This disease is caused by a protozoan (one-celled) parasite and infects the liver and intestinal tract. Rabbits become infected with this disease after eating food or drinking water that has been contaminated with the feces of an infected rabbit. Symptoms vary depending on whether the disease is affecting the liver or the intestinal tract.

Liver infection symptoms:

- Diarrhea

Intestinal tract infection symptoms:

- Weight loss
- Soft to watery feces
- Mucus or blood in feces
- Soiled anal area
- Dehydration
- Increased thirst
- Possibly death

The severity of infection (both types) depends on how many protozoa the rabbit ate, the age of the rabbit, the strength of the rabbit's immune system, and other illnesses the rabbit might currently have. Occasionally, the protozoa can infect the nasal passages, resulting in respiratory disease (nasal coccidiosis). Currently there are no vaccines against this disease. Prevention includes keeping the rabbit's environment clean and avoiding contact with infected feces or food and water contaminated with feces. **If your rabbit has any of the symptoms listed above, seek immediate veterinary care.**

Mucoid enteritis (pronounced “myoo-koid en-tuh-rhy-tis”). This illness causes rabbits' droppings to fill with a jelly-like substance. Eventually, the rabbit develops a pot-bellied appearance with its stomach area looking like a filled water bottle. Symptoms include

- Grinding of the teeth
- No appetite
- Diarrhea

Prevention includes feeding your rabbit a proper ration that is high in fiber and low in protein. Regular enrichment with long-stem hay will often help correct the condition.

But consult with your veterinarian first before taking any action.

Sore hocks. This disease infects the bottom and the hind feet of the rabbit. Sores that appear on those areas usually are caused by urine irritation of the skin and a poorly cleaned cage. Wire floors can also encourage sore hocks. Symptoms include

- Shifting back and forth on the feet
- Laying down more than usual
- Trying to sit on things other than the wire and staying off the feet due to the sores

In the beginning, the bottom of the rabbit's feet will become red and lose fur. They will eventually harden and begin to bleed. Eventually, the skin surface will start to look like cottage cheese and still continue to bleed. If left untreated for a long time, the rabbit could permanently lose the ability to grow fur on the infected area. **Seek veterinary help immediately.** A good way to prevent this disease is to always keep the rabbit's cage clean.

Abscess (pronounced “ab-sess”). Abscesses are formed by bacteria. Bacteria feed on accumulated fluid in or on the rabbit's body, which provides an ideal place for bacteria to breed (reproduce). Symptoms include

- Pockets of pus that form on the rabbit's tissue. They can form anywhere on the rabbit (on its liver, bones, skin, face, etc.).
- Inflamed (irritated) thickened tissue around the pockets of pus.

If you see or feel any lumps on your rabbit, there is a high chance that it is an abscess. **To be certain, always consult a veterinarian.** The most important way to prevent abscesses is to make sure the rabbit exercises every day, has a healthy diet, and lives in a clean home.

Obesity (pronounced “oh-bee-suh-tee”). Obesity occurs when a rabbit has too much body fat and becomes heavier than its breed's average body weight. This condition occurs when a rabbit is fed an unhealthy diet, meaning that it is fed too many treats or too much food. Some clear signs of obesity are

- Potbelly
- Extra padding in the shoulders, legs, and groin

If the rabbit's obesity is untreated, it can cause various problems throughout the rabbit's body. For example, too much weight will put too much pressure and stress on the bones and joints so the rabbit will have a difficult time moving about.

A good way to prevent obesity is to make sure the rabbit eats an appropriate diet. Ask your veterinarian for advice on what to feed the rabbit. Even feeding your animal excessive amounts of vegetables (like carrots) can cause the rabbit to become overweight! It is important to find the correct diet for your rabbit.

Handling and Restraint

- Rabbits are very delicate creatures, so it is very important to know how to handle a rabbit in a way that will not cause it any harm or injuries. Improper handling can cause the rabbit serious, life-threatening injuries.
- A rabbit's spine is extremely fragile. Back injuries most often occur when rabbits are dropped or improperly picked up or restrained. When a rabbit becomes frightened, it will struggle violently, using its strong back legs to try to break free. Holding a rabbit improperly while it tries to free itself can cause the rabbit to overextend the lower back region of its spine, leading to fractures and dislocations. When handling a rabbit, do not try to overpower it.
- Signs of back injury may include a lack of coordination, uncontrolled urine-soiling and defecation, or in the most serious cases, paralysis of the rear legs. Any rabbit exhibiting any of these signs should be examined by a veterinarian at once.

- Speaking softly while you approach a rabbit can help when you will need to restrain it.
- By covering the rabbit's eyes and lightly stroking it, you can often induce a trance-like state for the rabbit. A rabbit in this condition will usually be more relaxed and less prone to panic and injury.
- Rabbit ears have a very complex system of blood vessels that are involved in heat regulation and sound gathering. A rabbit should NEVER be picked up by its ears nor should its ears be held as a means of restraint. Also, never hold a rabbit by its limbs or tail.
- It is important to know how to properly handle and restrain a rabbit, but it is also important to recognize that some rabbits simply do not like to be picked up. Repeated practice of picking up and setting down a rabbit will build your confidence and allow the rabbit get used to being picked up. Rewarding a rabbit after you have picked it up will also help decrease its fear of being picked up.
- When holding a rabbit, hold it close to you. Rabbits are unpredictable and may kick and struggle at any moment, so be prepared! If you have a secure grasp on your rabbit and it tries to struggle out of your grasp, hug the rabbit to your body and hold it close. This will protect both you and the rabbit. If you don't have a good grasp on the rabbit, get it close to the ground immediately and safely let it go.

Please review the suggested references below for proper rabbit handling and restraining techniques.

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HEALTH ASSESSMENT SUMMARY

Rabbit Name _____ Breed _____ Gender _____ Age _____

General Symptoms

Is there anything you notice that you should be concerned about?

Day 1 _____

Day 2 _____

Day 3 _____

Day 4 _____

Day 5 _____

Handling and Restraint

Describe how the rabbit was handled. _____

Was the rabbit handled appropriately? If not, in what way was it inappropriately handled? _____

Suspected Diagnosis *(Use the Rabbit Disease Descriptions)* _____

Observations

1. Explain which symptoms from the above journal helped you identify a problem, and how. _____

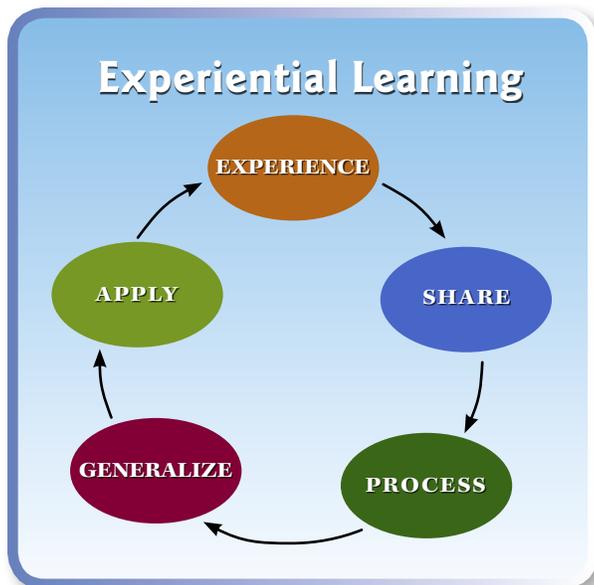
2. What other observations do you think might be important? _____

3. How would recording daily observations of your rabbit help you monitor your rabbit's health? _____

APPENDIX

The activities in this curriculum were designed around inquiry and experiential learning. Inquiry is a learner-centered approach in which individuals are problem solvers investigating questions through active engagement, observing and manipulating objects and phenomena, and acquiring or discovering knowledge. Experiential learning (EL) is a foundational educational strategy used in 4-H. In it, the learner has an experience phase of engagement in an activity, a reflection phase in which observations and reactions are shared and discussed, and an application phase in which new knowledge and skills are applied to a real-life setting. In 4-H, an EL model that uses a five-step learning cycle is most commonly used. These five steps—Experiencing, Sharing, Processing, Generalizing, and Application—are part of a recurring process that helps build learner understanding over time.

For more information on inquiry, EL, and the five-step learning cycle, please visit the University of California Science, Technology, and Environmental Literacy Workgroup's Experiential Learning Web site, <http://www.experientiallearning.ucdavis.edu/>.



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R A B B I T S : From the Animal's Point of View (5)

Rabbit Care and Responsibility



Subject Overview and Background Information

There is a lot to know about raising and caring for rabbits. Having a rabbit is a big responsibility and one needs to understand its behavior, housing requirements, nutritional needs, and potential health care issues in order to prevent injury or disease. Knowledge of these essential facts is the foundation of becoming a successful rabbit caretaker. By applying this knowledge carefully and thoughtfully, a caretaker can properly maintain the health and well-being of a rabbit and ensure it a high quality of life.

• Concepts and Vocabulary

Proper animal care, quality of life, responsibility.

• Life Skills

Critical thinking, decision making, disease prevention, problem solving, sharing

• Subject Links

Science, Language Arts

• Overview of Activity

This activity, entitled *Rabbit Responsibility*, provides different scenarios that involve issues relating to the care and raising of a rabbit. Youth will need to use the knowledge they gained from the previous rabbit units as they read scenarios and answer questions concerning the proper care of rabbits. Youth will discuss, reflect, and suggest alternative solutions for each scenario.

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ACTIVITY 1



Rabbit Responsibility

Background Information

A tremendous amount of **responsibility** comes with owning an animal. Animals need us to provide for their needs, including a safe and sanitary home, healthy and nutritious food, and proper veterinary care. When we make the commitment to **care** for one or more animals, these responsibilities become part of our everyday obligations.

• Time Required

45 to 60 minutes

• Concepts and Vocabulary

- **Care.** To provide for the needs of someone or something.
- **Responsibility.** Being accountable for one's actions or behaviors.

• Life Skills

Sharing, critical thinking, problem solving, decision making, disease prevention

• Subject Links

Science, Language Arts

• State Content Standards

Science

- Third Grade:
 - » *Investigation and Experimentation – 5e*
- Sixth Grade:
 - » *Investigation and Experimentation – 7d*

Language Arts

- Third Grade:
 - » *Reading Comprehension – 2.2, 2.6*

- Fourth Grade:
 - » *Listening and Speaking Strategies – 1.7, 1.8*
- Fifth Grade:
 - » *Reading Comprehension – 2.4*
 - » *Listening and Speaking Strategies – 1.5*
- Sixth Grade:
 - » *Listening and Speaking Strategies – 1.5*
 - » *Speaking Applications – 2.5a, 2.5b*

• Suggested Grouping

Pairs or small groups.

• Materials Needed

(* = Materials provided in curriculum)

- * *Rabbit Responsibility Stories* (4 total)
- Flip chart paper
- Writing implements

• Getting Ready

- Divide the youth into as many as four small groups.
- Make sure there is enough flip chart paper and enough writing implements to supply each group.
- Make enough copies of the *Rabbit Responsibility Stories* to give each group a different story.

Opening Questions

Have the youth work in pairs or small groups. Pose and discuss the following questions:

1. **What does being a “responsible animal owner” mean to you?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What types of things do you think a responsible owner should do for his or her**

animal? Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

3. **What types of needs do you think rabbits have, and how do you think an owner can best address these needs?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
4. **Describe some situations where you think it might be hard for an owner to keep up with rabbit care responsibilities. What might be the consequences of this?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Procedure (Experiencing)

Inform the youth that they are going to review stories about youth who are in situations where they have to make decisions about how they are going to care for their rabbits.

Give each group of youth one of the stories that follow. Encourage each group to discuss their answers to the follow-up questions together and record their ideas on paper. Once the individual groups have discussed their stories, they will present their ideas to the combined groups.

Sharing, Processing, and Generalizing

After the activity, talk with the youth about their general thoughts, observations, and questions. Follow the lines of thinking developed through the general thoughts, observations, and questions raised by the youth; if necessary, use more targeted questions as prompts to get to particular points. Specific questions might include

1. **Can you think of an example of a situation where you have had to make a difficult decision about caring for your rabbit?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.
2. **What are some ways that youth can learn to make the most responsible decisions about caring for their rabbits?** Ask the youth to share

their ideas verbally or write their thoughts and ideas on the paper provided.

3. **Have you ever known someone who was not a responsible animal owner? What caused you to be concerned about the way that they cared for their animal? What, if anything, did you do in that situation?** Ask the youth to share their ideas verbally or write their thoughts and ideas on the paper provided.

Concept and Term Introduction

At this point, volunteers need to ensure that the concepts of **care** and **responsibility** have been introduced or discovered by the youth. (**Note:** The goal is to have the youth develop concepts through their exploration and define terms using their own words.)

Concept Application

- If youth have project animals or pets, have them review how they take care of their animals. Is the care they are providing sufficient for the needs of their animals? If not, what do they need to change in order to provide the animals with sufficient and appropriate care?
- If youth do not have a project animal or pets, have them observe a friend's animal and review its condition and care. *Make sure the youth ask permission from the owner before they observe the animal.* Would they deem the care to be sufficient for the needs of the animal? If not, what changes need to be made to provide sufficient care?

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Rabbit Responsibility Stories

WHAT SHOULD CONNOR DO?

A 10-year-old boy named Connor adopted a rabbit that is 3 months old. He named his rabbit Bobo. Connor's parents and Connor decided that Bobo is entirely Connor's responsibility, and he must pay for Bobo's expenses with his allowance. Connor accepts this responsibility and is very excited about his new friend. Because his knowledge of rabbits is very limited, he looks up a local rabbit group that he can join to communicate with others about the animal. The group consists of children from ages 8 to 16, and has an online forum where they can post questions and answers about rabbits. Once every two weeks, the group holds a meeting for its members where they can ask questions in person or bring in their rabbits to show a volunteer leader. The overseer of the rabbit group is the parent of a child who has a rabbit of her own.

Connor houses Bobo in a wire cage with a towel on half of the flooring. He researched the proper diet for a rabbit and feeds Bobo a balanced diet. He cleans Bobo's cage regularly and constantly checks to make sure Bobo has plenty of clean water. One day, he decides to let Bobo explore his room. While Bobo is out of his cage and freely wandering around his room, Connor sits at his desk and works on his homework. After one hour, Connor finds Bobo and places him back in the cage.

The next day, Connor notices that Bobo is behaving differently than normal. He is not constantly eating at his food bowl the way he usually does and he is unusually quiet. Connor is worried and posts a question on the online forum, stating how he let Bobo roam freely in his room and what symptoms he is now observing. Connor continues to observe Bobo. The abnormal behaviors do not change or go away. In fact, Bobo seems to be getting more sedentary and losing energy. If he takes Bobo to the vet, he knows it will cost him more than a month's allowance. Connor checks the forum but nobody has replied. He searches online at other websites but they only suggest various causes of abnormal behavior, so he cannot know for sure what is causing Bobo to behave this way. Connor is afraid that if his parents find out that something might be wrong with Bobo that they will not allow him to keep it any longer. He calls the volunteer leader from his rabbit group, but she is out of town and will not be back until tomorrow. Connor is not sure what to do and needs help making his decision.

Questions for Discussion

1. What, if anything, do you think is wrong with Bobo?
2. What do you think could have caused the problem?
3. Is Connor meeting his responsibilities as a rabbit owner? Explain.
4. Who could Connor talk to for help with this decision?
5. If you were in Connor's situation, what would you do and why?
6. What could Connor have done to avoid this situation?



WHAT SHOULD KELLY DO?

Kelly has been raising rabbits for the past 3 years. She has several breeding pairs that she houses in a large hutch in her back yard. The rabbits have an indoor area with nesting materials and an outdoor area where they can play, dig, and get fresh air and exercise. Kelly's rabbits get fresh hay and a variety of nutritious vegetables every day. They also get fruit or other small treats on occasion. Kelly provides her rabbits with toys to chew on and play with and cleans their hutch every afternoon as soon as she gets home from school. Every year Kelly's veterinarian visits her rabbits to give them a check up and update their vaccinations. Kelly allows her pairs to breed and raises one litter each year. When the kits are 6 to 8 weeks old and ready to be weaned from their mother, she sells them to earn money. Kelly usually sells her rabbits to people she knows through her local rabbit club or other activities in which she is involved. People like buying rabbits from Kelly because they are always very healthy and tame.

This year, Kelly is planning to sell her kits to raise enough money for a special gift for her mother's birthday. Kelly has been planning to buy her mother a necklace and if she is able to sell all of her kits she will have just enough money. A family from a town 2 hours away has contacted Kelly about buying her bunnies. She does not know this family, but they heard about Kelly's rabbits from a friend of a friend and they are interested in buying 10 kits.

When Kelly's kits are 3 weeks old, the family calls again and tells Kelly that they will be making the trip to her town next weekend and would like to pick up the kits then. Kelly explains that she usually waits to wean the kits from the mother rabbit until they are 6 weeks old and they will only be 4 weeks old by next weekend. The family explains that this is the only time that they can make the long trip to Kelly's town, so if she wants to sell them the rabbits it will have to be next weekend. Kelly is not sure what to do, but she tells the family that she will contact her veterinarian to see what she recommends.

Kelly's veterinarian says that it can be stressful for the kits to be separated from the mother at only 4 weeks of age. However, if they are given Kitten Milk Replacer two times a day until they are 6 weeks old, they can survive and be healthy without their mother.

Kelly also decides to talk about her situation with a friend from her rabbit club. While they discuss the baby rabbits, Kelly mentions the name of the family and her friend suddenly becomes very concerned. Kelly's friend says that she heard about this family before and that they are known as rabbit hoarders. Kelly's friend says that she heard this family keeps many rabbits on their property in dirty, cramped cages, without proper nutrition or veterinary care.

Now Kelly is confused. She has spoken to this family on the phone several times and they seem like very nice and caring people. She usually likes to visit the homes of the families who buy her rabbits, but since these people live so far away she doesn't have the option to do that this time.

Kelly thinks about her situation. She really wants to do a nice thing for her mom by buying the necklace and if she doesn't sell the rabbits to the family from far away, she probably won't be able to raise enough money in time for her mom's birthday. However, she isn't sure about removing the kits from their mother at 4 weeks of age, and what if the story her friend told her about this family taking poor care of their rabbits is true?? Kelly needs help making her decision, but she can't talk to her mom because that would ruin the surprise.

Questions for Discussion

1. What information do you think Kelly should consider when making her decision?
2. Who could Kelly talk to for help with this decision?
3. If you were in Kelly's situation, what would you do and why?
4. If you were to sell one of your rabbits to a new owner, what type of questions would you ask the buyer?
5. If you were to sell one of your rabbits to a new owner, what type of information should you provide to the buyer to make sure that the rabbit receives proper care?

WHAT SHOULD HOLLY DO?

A 9-year-old named Holly joins a local animal club and buys Violet, a 7-week-old Californian meat rabbit to show. There is a project meeting every week where the youth gather together and give a brief report to their volunteer leader. The volunteer leader also makes a quick visit to each youth's home every month, where he looks at the animal and talks to the youth to make sure the animal is being properly fed. Holly houses Violet in a wire cage with a soft towel on the flooring.

One day, Holly visits her friend who also has a pet rabbit named Rose. Her friend tells Holly that Rose has a dry spot on her coat that looks a little crusty, which are symptoms of ringworm. Holly holds Rose to examine the spot, and upon returning home, picks up Violet to make sure she has no spots. A month passes, and the club volunteer comes for her visit. Holly takes Violet out of its cage and shows the volunteer. Violet is displaying symptoms of ringworm, but the spots are not in areas that are highly visible, and neither the volunteer leader nor Holly examines Violet thoroughly enough to notice them.

A week later, Holly's friend comes over to visit Violet. Holly picks up Violet and her friend is so excited she squeals with delight, which frightens Violet. Violet starts to struggle in Holly's arms but she holds onto Violet tighter. After several seconds, Holly's hand slips, and she drops Violet on the floor. Violet does not hop away like she normally does, but remains still where she fell.

A week passes, and Holly realizes that she has itchy spots on her elbow that have the appearance of a reddish ring (symptoms of ringworm on humans). Also, she realizes that Violet's movements have not been normal; she has not been hopping. In fact, she has barely been moving. Violet's feed intake has been close to normal so Holly decides to observe her longer. After two weeks, Violet begins to hop again but with a limp. Holly decides to consult a veterinarian. When Holly takes Violet to a veterinarian, she finds out that Violet has a fractured leg bone and ringworm. Unfortunately, because Holly has waited so long for help, Violet's fracture has begun to fuse together. The veterinarian tells her that he could either break the bone again and correctly fix it, or let the fracture continue to heal the way it is. Violet will never hop without a limp, but is no longer in pain.

When Holly goes home, she remembers there is a pre-qualifying rabbit showing during the weekly meeting this week. The veterinarian has told her that ringworm is contagious to other rabbits and humans, and that stressful situations for Violet should be minimized while her leg is healing. If Holly does not participate in this pre-show, she cannot exhibit Violet at the show.

Questions for Discussion

1. What should Holly do and why?
2. Is Holly meeting her responsibilities as a rabbit owner? Explain.
3. What could Holly have done earlier that would have prevented these problems?
4. What could the volunteer leader have done differently to better guide the youth?



WHAT SHOULD SHANTAL DO?

A 9-year-old named Shantal just receives a rabbit for her birthday. She decides to name it Bugs. Her parents think that giving her a rabbit will not only provide companionship but also teach her about responsibility. If she can prove in one month that she can take care of Bugs, then she can keep him. She is in charge of feeding, cleaning, and playing with Bugs.

Shantal loves Bugs very much. She places the cage on the windowsill next to her bed so she can be near it. She takes great care in making sure Bugs always has enough food and water. She feeds Bugs lots of greens and carrots. She also loves sharing food with Bugs and always gives a little bit of what she eats to Bugs. This includes peanut butter and jelly sandwiches, cookies, fruits etc. She always makes sure the cage is clean and that Bugs gets enough exercise each day.

Her family plans a vacation and cannot take Bugs along, so Shantal asks her neighbor if she can take care of Bugs. The neighbor doesn't know anything about taking care of rabbits. Shantal tells her that it is easy and all she has to do is give Bugs food and water every day. The neighbor keeps Bugs on the backyard porch. While on vacation, there is an extended heat wave back at home. Bugs does not eat and pants excessively. Bugs also starts to grind his teeth and is very hesitant to eat any food the neighbor gives her. She also doesn't move for most of the time. The neighbor observes all of this but doesn't do anything because she thinks it is probably normal behavior.

When Shantal gets home, she notices Bugs acting strangely. She asks her neighbor what has happened but the neighbor says everything was fine. Concerned, Shantal then asks a family friend who knows a lot about rabbits to come over and take a look at Bugs. The family friend notices Bugs's eyes are unusually watery, with a lot of nasal discharge, and a lot of drooling. He also notices that Bugs's teeth are very long.

Questions for Discussion

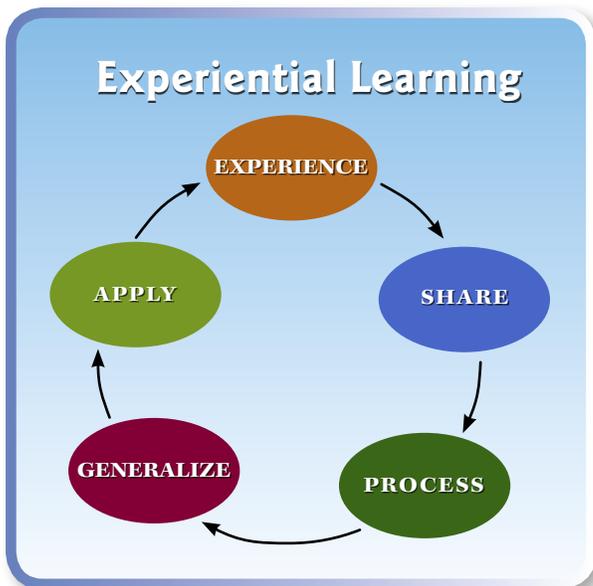
1. What, if anything, do you think is wrong with Bugs?
2. What do you think could have caused these problems?
3. What should Shantal do now and why?
4. Did Shantal meet her responsibilities as a rabbit owner? Explain.
5. What could Shantal have done earlier to prevent these problems?



APPENDIX

The activities in this curriculum were designed around inquiry and experiential learning. Inquiry is a learner-centered approach in which individuals are problem solvers investigating questions through active engagement, observing and manipulating objects and phenomena, and acquiring or discovering knowledge. Experiential learning (EL) is a foundational educational strategy used in 4-H. In it, the learner has an experience phase of engagement in an activity, a reflection phase in which observations and reactions are shared and discussed, and an application phase in which new knowledge and skills are applied to a real-life setting. In 4-H, an EL model that uses a five-step learning cycle is most commonly used. These five steps—Experiencing, Sharing, Processing, Generalizing, and Application—are part of a recurring process that helps build learner understanding over time.

For more information on inquiry, EL, and the five-step learning cycle, please visit the University of California Science, Technology, and Environmental Literacy Workgroup's Experiential Learning Web site, <http://www.experientiallearning.ucdavis.edu/>.



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