



R A B B I T S : From the Animal's Point of View 1



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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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

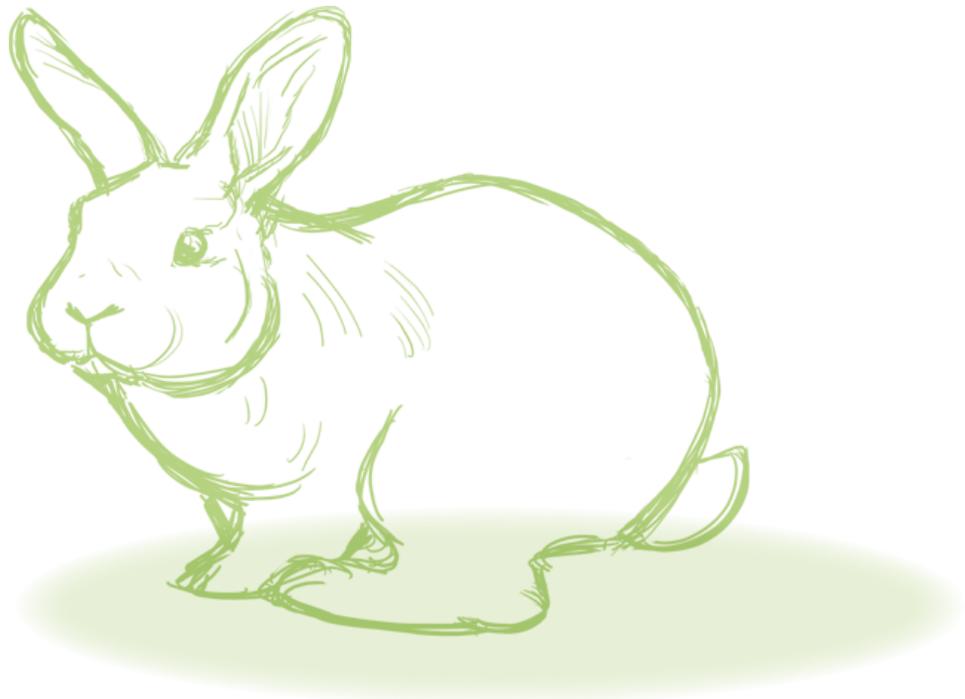
At this point, volunteers need to ensure that the terms **camouflage, herbivore, warren, kit, predator, and prey** have been discovered by or introduced to the youth. (**Note:** The goal is to have the youth discover terms and concepts on their own, defining them with their own words. The picture of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

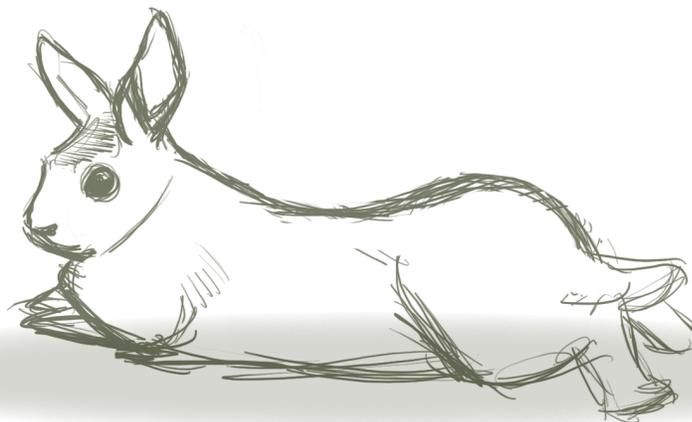
Sharing, Processing, and Generalizing

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

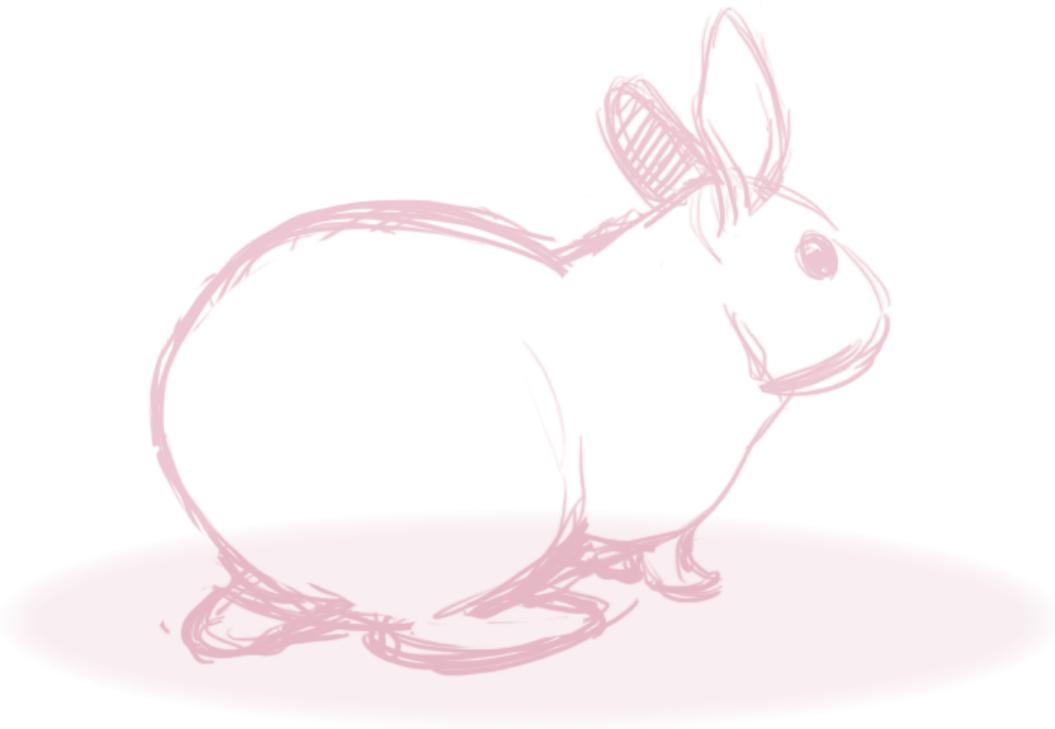
curious about the toy? Does it show signs of fear, happiness, or contentment? If you notice that it seems fearful, make sure to remove the toy so you do not cause them to become stressed.

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.

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- The American Rabbit Breeders Association, Inc. Breeds of rabbits and cavies. Arba.net. <http://www.arba.net/Breeds.htm>.
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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.



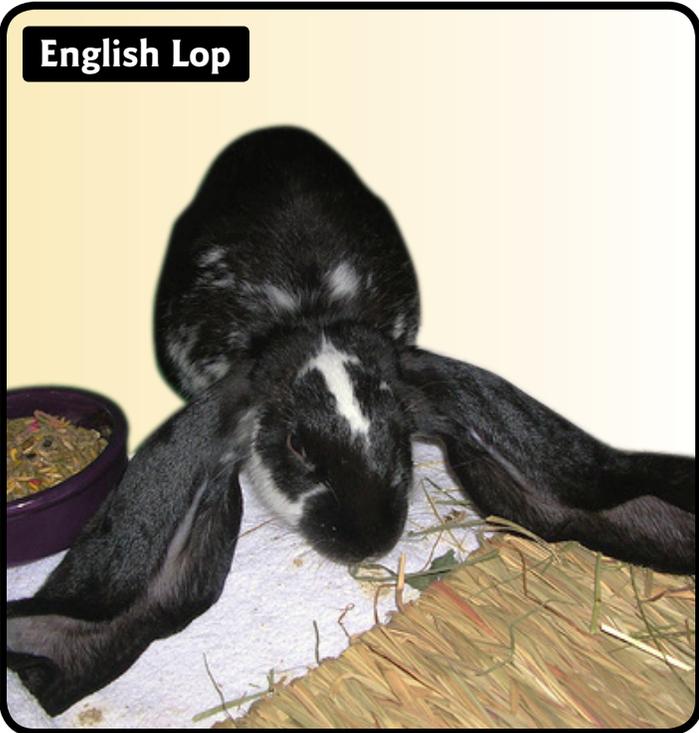
American Fuzzy Lop



Britannia Petite



English Lop



Giant Angora





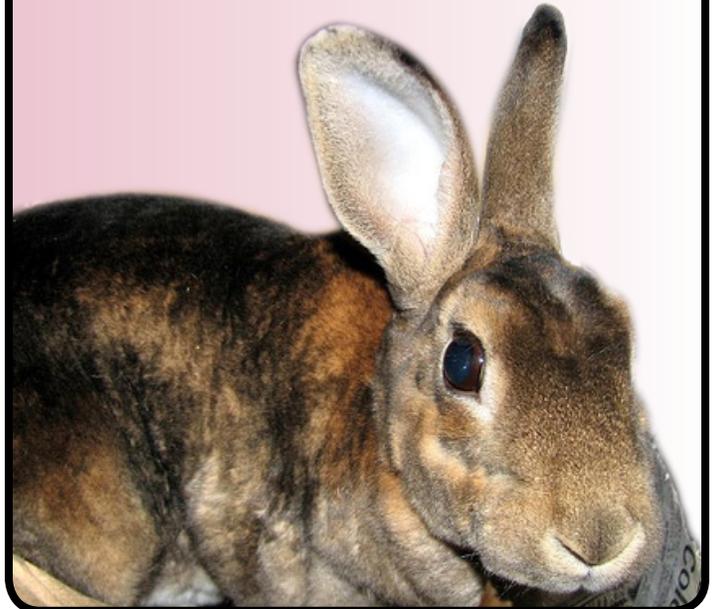
Print one-sided and cut out along dashed lines.



Jersey Wooly



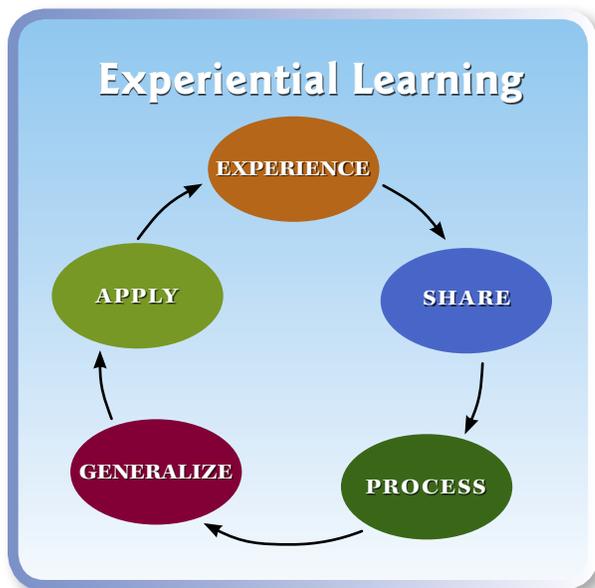
Rex



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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