



What's That, Habitat?

Sort out the essential components for survival.

Objectives

Students will (1) identify their own basic needs for food, water, shelter, and space in a suitable arrangement; and (2) generalize that all animals, including humans and wildlife, have similar basic needs.

Background

All animals—humans, pets, domesticated animals, and wildlife—have similar basic needs. All animals need food, water, shelter, and space in the proper arrangement. Together, these resources make up an animal's habitat. If one or more of these essential components is missing from an animal's habitat, the animal will not be able to survive.

An animal's habitat provides for it in many ways. For example, every animal needs food, and the kind of food depends on the type of animal. For humans, this might be pizza or tandoori chicken. For a butterfly, food might be the nectar from a flower or the sap from a tree. For a bobcat, food might be a small bird or rabbit. Or, for a moose, food would likely be grass or other green vegetation.

Every animal—no matter its size—must also have water. Some animals such as a tiny pocket mouse only need small amounts of water. They may even get enough water from the vegetation they eat. Larger animals such as a human or an elk need much more water.

Every animal also needs shelter. A shelter can look very different depending on the animal. A home for a human might be a four-walled house, an apartment, or a tent. A home for a fox might be a den dug into the ground. Or, a home for a woodpecker might be a cavity pecked in a dead tree branch. Some animals do not build a home; rather, they rely on homes made or left by other animals. Many small songbirds use old woodpecker cavities to escape the winter cold. A snake might use an empty mouse hole for shelter. Human buildings also provide homes for wildlife—

Grade Level:

Lower Elementary,
Upper Elementary

Content Areas:

Science, Social Studies,
Environmental Education

Method:

Students categorize household items as essential or nonessential for human survival. Students then compare their needs with those of animals.

Materials: This activity requires special materials. See text box on the facing page for a full list.

Activity Time: one 20- to 30-minute session

People Power: any

Setting: indoors

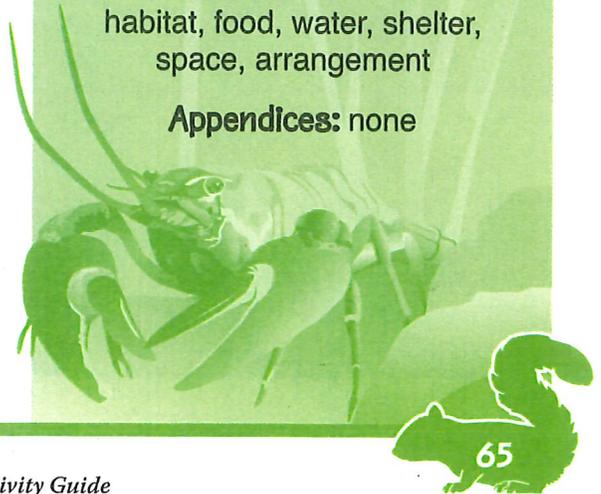
Conceptual Framework

Topic Reference:
HNIIA1, IDIA2

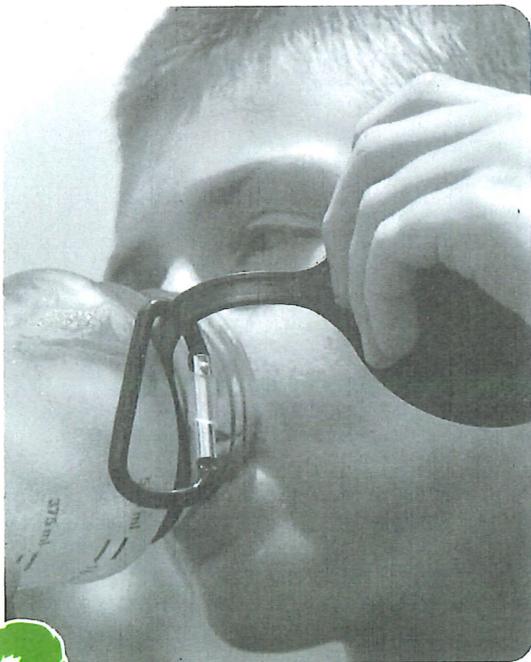
Terms to Know:

habitat, food, water, shelter,
space, arrangement

Appendices: none



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such as when a skunk or opossum burrows under a porch. Other animals neither build nor reuse a defined shelter; rather, they simply find a covered area in which to hide or rest. For instance, a white-tailed deer will simply “bed down” under a pine tree or in a dense clump of tall grass.

Every animal must also have enough space. Imagine if you and your entire class were to live within the four walls of your classroom. You could never go outside to play. You would need

Materials

- Bag (an empty pillowcase works well, or a large brown paper bag)
- Two hula hoops
- “Wants” and “Needs” signs
- Water bottle to represent water
- Food items or representations, such as an ice cream container, granola bar, and can of beans
- Small toy house to represent shelter
- Piece of paper with the word “Space” written on it to represent space
- A book
- Pair of sunglasses (toy or fake sunglasses work well)
- Toy phone or cell phone
- Box of crayons or markers
- Toy car (to represent an actual car)
- Watch or clock
- Stuffed animal or other small toy
- Camera (toy or fake camera works well)
- Other appropriate items to represent “Wants” and “Needs”

NOTE: Educators are encouraged to include items that may be considered both a “Want” and a “Need.” An alternative to collecting items is to find and print pictures of each item on the Internet.

to produce all your food within these walls. You would need to get all your water from inside your classroom. This would certainly not be a suitable arrangement! Animals need more space than they physically occupy in order to find or produce food, gather water, move around (to avoid competitors or predators, among other reasons), and find or create a shelter.

Just like food and water, the amount of space an animal needs often depends on the size of the animal. The home range of a male mountain lion may be 150 square miles, while a rabbit might only need one-fourth of a square mile. Some species are an exception to this rule, however. Many migratory songbirds need space in both their winter habitat and summer habitat, which may be separated by many miles.

Finally, all animals need to be able to access food, water, shelter, and space in the proper arrangement. Imagine if an ant's food were 3 miles one direction, its water 2 miles in another direction, and its shelter 4 miles in another direction. This arrangement would make it difficult for the ant to access life-sustaining resources in a reasonable amount of time. An animal's habitat components must be arranged in the appropriate proximity for the animal to use them effectively.

The main purpose of this activity is for students to differentiate between the essential requirements for survival versus nonessential resources that make our lives easier or more enjoyable. In the end, the essential requirements for animal and human survival are identified as the habitat components of food, water, shelter, and space.

Procedure

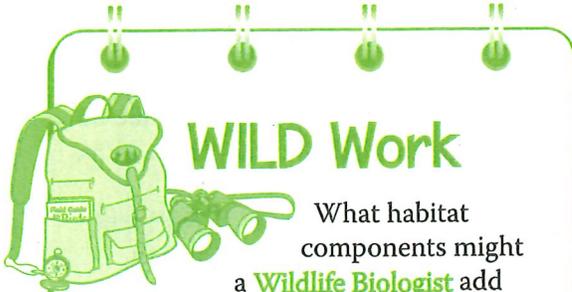
Before the Activity

Place the activity items in a bag or pillowcase. Make two signs: one that says "WANTS" and one that says "NEEDS." Place two hula hoops on the ground, and set one sign in front of each hula hoop.

1 Explain to students that there are many things in our lives that we rely on to make us happy and healthy. Some things are "Wants," or things that we do not need to survive, and other things are "Needs," or things that are essential for our survival. Ask students to think of some things they need to live each day. Write these items down on the board. Next, ask students to think of some items that they do not need but that make their lives more fun or convenient. List these items on the board.

2 Explain to students that your bag contains many different items. Students will have the chance to pull out an item from the bag. Once they do, they will determine if the item should be placed in the "Needs" hula hoop or the "Wants" hula hoop. When they place the item in a hula hoop, they must explain why they





WILD Work

What habitat components might a **Wildlife Biologist** add or remove to manage a wildlife population? What considerations for the needs of wildlife do **Landscape Architects** and **Environmental Engineers** make when planning and designing new projects? To find more information on these careers, visit the WILD Work link at www.projectwild.org.



In Step with STEM

■ Humans have made a variety of shelters throughout history based on the resources available to them. A shelter model can be made out of homemade clay using flour, salt, oil, and water. Have students create their own recipe for clay and construct their shelter on a flat board. Students could also construct shelters outdoors based on found natural materials. Take shelters outside and leave them for two weeks to see how they stand up against the elements. Have students record observations at certain intervals during the testing period, noting the date, time, and weather during each observation. Based on the results, have students create an improvement plan for their clay recipes and construction techniques.

- Using an online platform, have students post their clay recipes, photos of their shelters over the two-week period, and their improvement plans. For more details on this activity, visit the In Step with STEM link at www.projectwild.org.

think their item is a “Want” or a “Need”. (**OPTIONAL:** Include enough items so that every student can select at least one. For a large group, items could be split into two or three bags so that students can quickly grab an item and return to their spots.)

3. Invite students individually to reach in and grab an item out of the bag, taking turns placing their items in the hula hoops and explaining their reasoning. If a student makes a mistake (e.g., if he or she puts food in the “Want” pile), do not correct the student; simply allow the item to stay in the wrong pile.

4. Some items can be considered both a “Want” and a “Need.” If a student is unsure about placing an item (e.g., ice cream) in one circle versus the other, overlap the hula hoops so that they create a Venn diagram. Allow the students to place items in the space where the circles overlap, indicating that the items represent both a “Want” and a “Need.”

5. Continue this process until all items from the bag have been placed in the hula hoops.

6. Once all items have been placed, ask students if they see any items that they think need to be moved from one pile to the other. When students move an item they must briefly explain why.

7. Work as a group to ensure that items are in their appropriate piles. The “Needs” hoop should include: food items, water bottle, house or shelter representation, and the “Space” card. It is okay if students have placed some of these items in the overlapping part of the Venn diagram, as both “Needs” and “Wants.” The “Wants” pile should include all other items from the bag.

8. Discuss why all the “Wants” items are truly “Wants.” For example, books are important to learn new things, but you can also learn by talking with others, asking questions of your teachers or parents, and making observations. A pair of sunglasses might be nice on a sunny day, but you could also shade your eyes with your hand, wear a hat, or sit in the shade. Neither of these items is necessary for survival, and wildlife certainly survive without them! Revisit the lists on the board. Should anything be added to or removed from the “Wants” and “Needs” lists?

9. Now ask students to imagine any animal and to think about that animal’s needs. What does that animal need to survive? Food? Water? Shelter? Space? Something else?

10. Reinforce with students that all animals have the same basic needs—food, water, shelter, space. Additionally, these things must be in the proper arrangement. Inform students that food, water, shelter, and space arranged to meet an animal’s needs is called “habitat.”



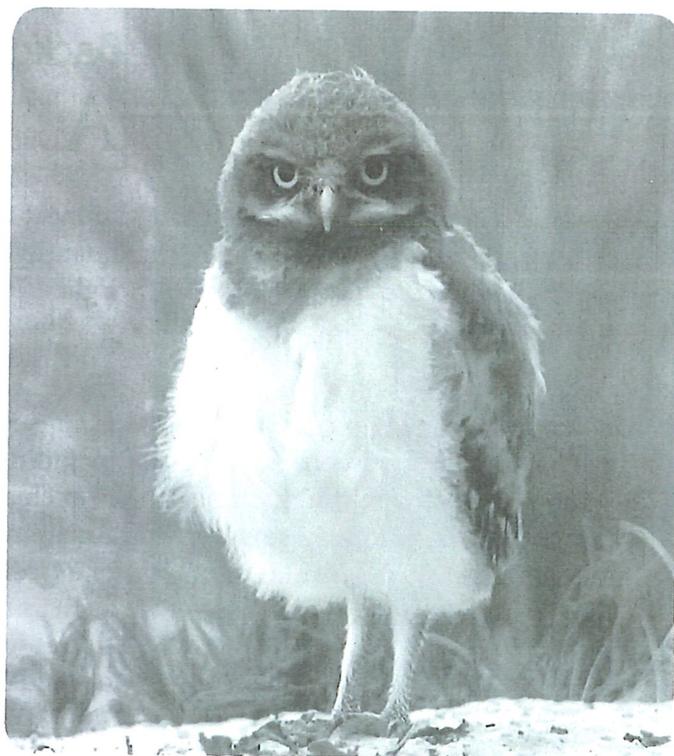
11. Ask the children if they could live in a home where the bathroom was 4 miles in one direction, the kitchen was 12 miles in another, and the bedroom was 9 miles in yet another direction. No! Ask students if they could survive without water? No! (Humans can survive about three days without water.) Ask students if they could survive without food? No! (Humans can survive about three weeks without food.) Ask students if they could survive without space in which to run and live and grow? Not for long! (Humans can survive in confined conditions for certain periods of time, but without enough space to obtain resources and maintain a healthy distance from others, humans can become sick and die.) Both humans and other animals must have all these things to survive.

Extensions

1. Ask students to think of an animal and draw a picture of their animal in the place where it lives. Students could also create a shoebox habitat for the animal. Students should be sure to include food, water, shelter, and space in an arrangement that they think would make it possible for the animal to survive. Ask students to talk about their creations and to highlight the habitat components they have included. Next, ask students to draw a picture of themselves in the place where they live. Make sure they indicate sources of food, water, shelter, and space and how they are arranged at their home. Compare the depictions of themselves and their animal. Do they both have the same habitat components? How are those components different?

2. To reinforce the idea of space, have five students come up front. Ask the class if they think all five students can stand inside a hula hoop. Instruct one student at a time to step inside the hula hoop. Do they all fit? Is it comfortable? Could they fit their lunch with them inside the hula hoop or lie down for a nap? Explain to students that space is an important component of habitat for humans and all animals.

3. To show the importance of the suitable arrangement of habitat components, line up the class shoulder-to-shoulder and “count off” each student as food, water, shelter, or space. If an ant were not allowed to touch the ground, could it get to all four components no matter whose feet is started at? Then have students rearrange in a line so that all those representing food are shoulder-to-shoulder, next all those representing water are shoulder-to-shoulder, and so on. If an ant were to start at any one person’s feet now, how would the new arrangement affect the ant’s ability to get all four necessary resources?



Assessment

1. Name the essential elements that wildlife species need to survive (food, water, shelter, and space—all in a suitable arrangement). Explain.

2. Name the essential elements people need to survive (food, water, shelter, space). Explain. Compare and contrast the habitat needs of wildlife and people.