



Organisms and Interdependence ***Teacher's Resource Packet***

For use in conjunction with the Organisms and Interdependence program at the Public Museum of Grand Rapids, Michigan, and State of Michigan curriculum standards.

Organisms and Interdependence
Teacher's Resource Packet Contents

These resources have been designed to help teachers as they prepare to bring their classes to Organisms and Interdependence at the Public Museum of Grand Rapids, Michigan. Feel free to use the materials before, during or after your visit.

Pre-Visit Materials

- Michigan Department of Education Curriculum Links
- Vocabulary
 - Teacher List
 - Student Worksheet
 - Crossword Puzzle
- Habitats Book List

Post Visit Materials

- *Everybody Needs a Home* Individual Activity
- *Oh Deer!* Whole Group Activity
- *Habitat Collage Mural* Group Activity
- *Micro-Habitats* Group Activity

These materials cannot be reproduced for use beyond the classroom without the written consent of the Public Museum of Grand Rapids, Michigan.

Curriculum Links

The Happy Habitats program is designed to fit with the Curriculum standards of the State of Michigan. The specific links covered are listed below.

Life Science

L.OL.E.3 Structures and Functions- Organisms have different structures that serve different functions in growth, survival, and reproduction.

- **L.OL.03.32** *Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting, and protection (for example: fur, wings, teeth, claws).*

L.EV.E.1 Environmental Adaptation- Different kinds of organisms have characteristics that help them to live in different environments.

- **L.EV.03.12** *Relate characteristics and functions of observable body parts to the ability of animals to live in their environment (for example: sharp teeth, claws, color, body covers).*

L.OL.E.1 Life Requirements- Organisms have basic needs. Animals and plants need air, water, and food. Plants also require light. Plants and animals use food as a source of

energy and as a source of building material for growth and repair.

- **L.OL.04.16** *Determine that animals require air, water, and a source of energy and building material for growth and repair.*

L.EC.E.2 Changed Environment Effects- When the environment changes, some plants and animals survive to reproduce; others die or move to new locations.

- **L.EC.04.21** Explain how environmental changes can produce a change in the food web.

L.EV.M.1 Species Adaptation and Survival- Species with certain traits are more likely than others to survive and have offspring in particular environments. When an environment changes, the advantage or disadvantage of the species' characteristics can change. Extinction of a species occurs when the environment changes and the characteristics of a species are insufficient to allow survival.

- **L.EV.05.11** Explain how behavioral characteristics (adaptation, instinct, learning, habit) of animals help them to survive in their environment.
- **L.EV.05.12** Describe the physical characteristics (traits) of organisms that help them survive in their environment.

Earth Science

E.ES.E.5 Human Impact- Humans depend on their natural and constructed environment. Humans change environments in ways that are helpful or harmful for themselves and other organisms.

- **E.ES.03.52** Describe helpful or harmful effects of humans on the environment (garbage, habitat destruction, land management, renewable and non-renewable resources).

Organisms and Interdependence Teacher's Guide

Word	Meaning
1. community	a group of living things that live together and depends on each other
2. habitat	the place where a community lives; including nonliving things like water
3. organism	a living thing; plants or animals
4. lake	a large inland body of standing water (example: Lake Michigan)
5. sand dune	a hill or ridge of sand piled up by the wind (example: Sleeping Bear Dunes)
6. marsh	an open, wet habitat with lots of grass-like plants (example: grasses, reeds, rushes, cattails, sedges)
7. forest	a dense growth of trees and underbrush covering a large area (example: Manistee National Forest)
8. field	open country; a piece of open land

Organisms and Interdependence Vocabulary

Name _____ Date _____

Directions: Rewrite each vocabulary word and then draw a picture to represent each picture.

community

habitat

organism

lake

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sand dune

marsh

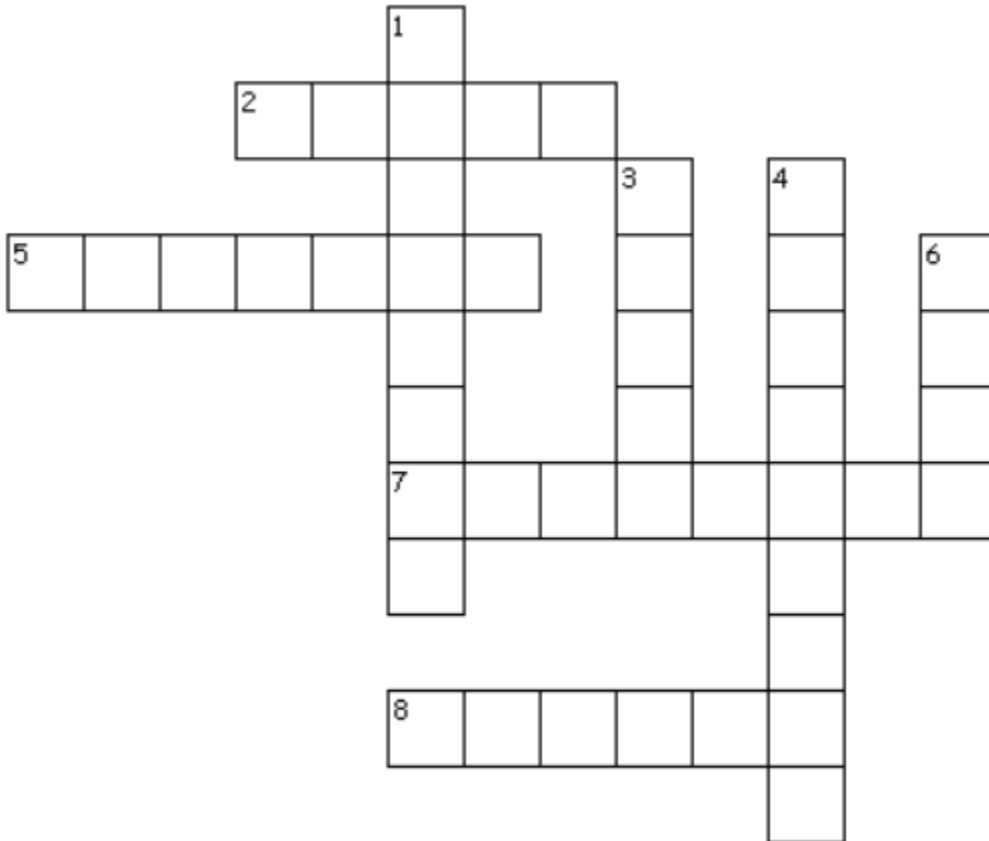
forest

field

Organisms and Interdependence **Vocabulary**

Name _____ Date _____

Directions: Use your vocabulary words and definitions to complete the puzzle.



Across

- 2. An open, wet habitat with lots of grass-like plants
- 5. The place where a community lives; including nonliving things like water
- 7. A hill or ridge of sand piled up by the wind
- 8. A dense growth of trees and underbrush covering a large area

Down

- 1. A living thing; plants or animals
- 3. Open country; a piece of open land
- 4. A group of living things that live together and depends on each other
- 6. A large inland body of standing water

Habitats Book List

These are some recommended books for you to use to help supplement your classroom instruction about habitats as you prepare for your field trip.

Author	Title	Grade Level
Albert, Richard E.	<i>Alejandro's Gift</i>	K-2
Arnosky, Jim	<i>Crinkleroots Guide to Knowing Animal Habitats</i>	K-4
Brenner, Barbara	<i>One Small Place in a Tree</i>	K-2
Collard, Sneed	<i>Our Wet World</i>	K-4
Fredericks, Anthony	<i>Under One Rock: Bugs, Slugs, and Other Ughs</i>	K-4
Reasoner, Charles	<i>Whose House is This?</i>	Pre-K
Seuling, Barbara	<i>Whose House?</i>	Pre-K
Snowball, Diane	<i>Exploring Fresh Water Habitats</i>	K-2
Stewart, David C.	<i>Animal Builders</i>	Pre-K

Everybody Needs a Home

- **Objective:** Students will generalize that people and other animals share a basic need to have a home.
- **Materials:** drawing paper, crayons/colored pencils

Background Information

Humans and animals – including pets, farm animals and wildlife – have some of the same basic needs. Every animal needs a home, but that home is not just a “house” like those in which people live. A home, for many animals, is a much bigger place – it is outdoors. The scientific term for an animal’s home is “habitat.” An animal’s habitat includes **food, water, shelter** or cover and **space**. Animals need all these things to be available in a way that meets the animal’s needs. We say things must be available in a **suitable arrangement**.

Homes are not just houses. A house may be considered shelter. People build houses, apartments, trailers, houseboats and other kinds of shelter in which to live. Animals do not need a home that looks like a house, but they do need some kind of shelter. The shelter might be underground, in a bush, in the bark of a tree or in some rocks.

Animals need a place to find food and water. They also need enough space to do these things. Everybody needs a home, and a home is bigger than a house.

Procedure

1. Ask students to draw a picture of where they or a person they know lives. Remind the students to include in their drawing examples of things they need to live (a place to cook/keep food, a place to sleep, etc.).
2. Once the drawings are finished, discuss the things they included in their pictures that represent things they need to live.
3. Ask the students to close their eyes and imagine: a bird's home, an ant's home, a beaver's home, the President's home and their home. *Optional:* Show students pictures of different places animal's live.
4. Discuss the differences and similarities among the different homes with the students. Talk about the things every animal needs in its home: food, water, shelter and space in which to live, arranged in a way that the animal can survive. Summarize the discussion by emphasizing that although homes are different, every animal, person, pet and wildlife needs a home.

Extensions

- Draw animal homes. Compare them to the places where people live.
- Go outside and look for animal homes. Be careful not to bother the animals, or their homes, in the process.

Oh Deer!

- **Objective:** Students will identify and describe food, water and shelter and three essential components of a habitat. Students will describe the importance of good habitats for animals.
- **Materials:** Large area and masking tape

Background Material

A variety of factors affect the ability of wildlife to successfully reproduce and to maintain their populations over time. Disease, predator/prey relationships, varying impacts of weather conditions from season to season (early freezing, heavy snows, flooding and drought), accidents environmental pollution and habitat destruction and degradation are among these factors.

The most fundamental of life's necessities for any animal are food, water, shelter and space in a suitable arrangement. Without these essential components, an animal cannot survive.

This activity is designed for students to learn that:

- A good habitat is the key to wildlife survival
- A population will continue to increase in size until some limiting factors are imposed
- Limiting factors contribute to fluctuations in wildlife populations
- Nature is never in "balance," but is constantly changing

Procedure:

1. Tell the students they are going to participate in an activity that emphasizes the most essential things that animals need to survive.
2. Mark two parallel lines on the floor 15 yards apart (with masking tape). Have the students count off by fours. Have the “ones” line up along one line and the rest of the students along the other line.
3. The “ones” become the “deer.” The deer need a good habitat to survive; food, water, shelter and space in a suitable arrangement. The deer needs to find food, water and shelter. When a deer is looking for food, it clamps its hand over its stomach. When it is looking for water, it puts its hand over its mouth. When the deer is looking for shelter, it holds its hands together over its head. A deer can choose to look for any of its needs during a round; it cannot change what it is looking for.
4. The “twos,” “threes” and “fours” are food water and shelter. Each student gets to choose at the beginning of a round which component they will be during the round. The students use the same hand positions as the deer.
5. The activity starts with all players lined up on their respective line with their backs to the students on the other line.
6. Begin the round by asking all the students to make their sign – deer deciding what they are looking for, each habitat component deciding what it is.
7. Count to three. At the count of three, each deer and habitat component turn to face the opposite group, holding their signs clearly.
8. When the deer see the habitat component they need, they are to gallop to it. (Habitat components stay on their line.) Each deer must hold the sign for what they are looking for until it reaches the component. Each deer that habitat component takes the “food,” “water,” or “shelter” back to the deer side of the line. *This represents the deer successfully meeting its needs, and reproducing as a result.* Any deer that fails to find food, water or shelter dies and becomes part of the habitat.
9. Continue this for several rounds, keeping track of the number of deer after each round.
10. Discuss with students what they experienced and saw during the activity. *The population of the deer expanded until the habitat was depleted and there was not sufficient food, water and shelter for the herd. The deer starved or died of lack of thirst or lack of shelter, and they returned as part of the habitat. This also happens in nature.*

Habitat Collage Mural

1. **Objective:** Students will be able to identify components of a habitat using art skills.
2. **Materials:** Large white paper, various art supplies (markers, crayons, paint, etc.) glue, 8.5x11” white paper

Procedure

1. Review components of a habitat with students (food, water, shelter and space)
2. Divide the class into four equal groups. Decide as a whole group which type of habitat you are going to create (lake, dune, marsh, forest). Each group will be responsible for designing one component of the mural. Group A: animals, Group B: food, Group C: water, Group D: shelter.
3. Each group will draw their habitat components for the mural on 8.5x11" paper.
4. When most of the groups are finished with their part of the mural, have groups bring their completed drawings to the center table. These will be glued on the large mural paper.
5. Once all drawings have been placed, discuss why this mural represents a habitat.

Micro-Habitats

- **Objective:** Students will be able to use their knowledge of habitats to find and identify components from their own small habitat.
- **Materials:** magnifying glasses, pencils, paper, popsicle sticks, yarn, timer, clipboards (optional)

Procedure

1. Divide your students into teams or pairs to work together on the assignment.
2. Take out a one foot by one foot square outside using the popsicle sticks and yarn.
3. Have the students examine their habitat closely to identify and list as many organisms (or evidence of organisms) as they can. Set the timer for 30 minutes.
4. If the students cannot identify an organism, they should sketch the organism (with any necessary notes) for later identification. You could also require students to sketch all organisms, even ones they can identify.
5. Encourage students to look through the turf, and use their magnifying glasses to find even the tiny organisms.
6. Back in the classroom: With encyclopedias, field guides and other reference materials have your students positively identify as many of the organisms they found as possible.
7. As a class, discuss how the different organisms and the things in their environment might work together to survive in their own micro-habitat.