



# Recipe for a Habitat

## Lesson at a glance:

This activity will inspire students to brainstorm the components that make up various wild communities and introduce them to the concepts of food chains and energy transfer.

## Materials:

- ❑ Large sheet of paper and crayons or markers
- OR
- ❑ Chalkboard and chalk

## Activity:

1. Explain to students that they are going to create a "recipe" for a habitat. Begin by asking students to pick a habitat (grassland, mountains, desert, tundra, etc). Ask the students to name some ingredients in the habitat. As they come up with ideas write or draw them on a large sheet of paper. Make sure that sunlight is included in their recipe.
2. Once a good list has been compiled, point out the producers. Draw lines from the producers to the animals that eat them and explain the term consumers. Continue until you've connected the entire list and formed a few complete food chains.
3. Ask students what decomposers are and where they should be drawn in. Ask them what the role of a decomposer is.
4. Explain that they have formed a cycle made up of producers, consumers and decomposers. Discuss the fact that this illustrates only a very small portion of the complex relationships among the organisms of the habitat.
5. Ask students what the role of humans might be in the cycles they have created.

## Summary:

1. During your trip to the Zoo, have your students find the habitats and the components of the "recipe" they created and look carefully for those they may not have included.
2. Have them complete the habitat back at school.

## Utah Science Content Standards Addressed:

### **Biology Core Science Benchmark**

*Ecosystems are shaped by interactions among living organisms and their physical environment. Ecosystems change constantly, either staying in a state of dynamic balance or shifting to a new state of balance. Matter cycles in ecosystems, and energy flows from outside sources through the system. Humans are part of ecosystems and can deliberately or inadvertently alter an ecosystem.*

#### **Standard 1: Students will understand that living organisms interact with one another and their environment.**

- **Objective 1:** Summarize how energy flows through an ecosystem.
- **Objective 2:** Explain relationships between matter cycles and organisms.
- **Objective 3:** Describe how interactions among organisms and their environment help shape ecosystems.

### **Science Core Benchmarks**

#### **Grade 3 Science Benchmark**

*For any particular environment, some types of plants and animals survive well, some survive less well and some cannot survive at all. Organisms in an environment interact with their environment. Models can be used to investigate these interactions.*

#### **Standard 2: Students will understand that organism depend on living and nonliving things within their environment.**

- **Objective 1:** Classify living and nonliving things in an environment
- **Objective 2:** Describe the interaction between living and nonliving things in a small environment.



#### **Grade 4 Science Benchmark**

*Utah has diverse plant and animal life that is adapted to and interacts in areas that can be described as wetlands, forests and deserts. The characteristics of the wetlands, forests, and deserts influence which plants and animals survive best there. Living and nonliving things in these areas are classified based on physical features.*

**Standard 5: Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.**

- **Objective 1:** Describe the physical characteristics of Utah's wetlands, forests and deserts.
- **Objective 2:** Describe the common plants and animals found in Utah environments and how these organisms have adapted to the environment in which they live.
- **Objective 3:** Use a simple scheme to classify Utah plants and animals
- **Objective 4:** Observe and record the behavior of Utah animals.

#### **Grade 8 Science Benchmark**

*The sun is the source for essentially all biological energy. Plants store captured light energy as chemical energy in sugars. Animals eat plants to obtain the energy and matter that they need. The energy from food is used for mechanical and heat energy. The matter is used to build the cells of the organism.*

*Food chains and food webs are models used to show the transfer of energy and matter among organisms. These models can be used to show relationships among organisms. Organisms, including humans, influence the ability of other organisms to live in a specific environment.*

**Standard 2: Students will understand that energy from sunlight is changed to chemical energy in plants, transfers between living organisms, and that changing the environment may alter the amount of energy provided to living organisms.**

- **Objective 1** Compare ways that plants and animals obtain and use energy.
- **Objective 2** Generalize the dependent relationships between organisms.
- **Objective 3** Analyze human influence on the capacity of an environment to sustain living things.

Adapted from "Recipe for a Forest," *Sharing Nature With Children*, J. Cornell, 1979 and *Recipe for an Ocean*, Oregon Coast Aquarium

**Assessment:**

# Recipe for a Habitat Collaboration Rubric

**Student Name:** \_\_\_\_\_

Category	4	3	2	1	Score
<b>Contributions</b>	Routinely provides useful ideas when participating in the group and in classroom discussion. A definite leader who contributes a lot of effort.	Usually provides useful ideas when participating in the group and in classroom discussion. A strong group member who tries hard!	Sometimes provides useful ideas when participating in the group and in classroom discussion. A satisfactory group member who does what is required.	Rarely provides useful ideas when participating in the group and in classroom discussion. May refuse to participate.	
<b>Quality of Work</b>	Provides work of the highest quality.	Provides high quality work.	Provides work that occasionally needs to be checked/redone by other group members to ensure quality.	Provides work that usually needs to be checked/redone by others to ensure quality.	
<b>Attitude</b>	Never is publicly critical of the project or the work of others. Always has a positive attitude about the task(s).	Rarely is publicly critical of the project or the work of others. Often has a positive attitude about the task(s).	Occasionally is publicly critical of the project or the work of other members of the group. Usually has a positive attitude about the task(s).	Often is publicly critical of the project or the work of other members of the group. Often has a negative attitude about the task(s).	
<b>Focus on the task</b>	Consistently stays focused on the task and what needs to be done. Very self-directed.	Focuses on the task and what needs to be done most of the time. Other group members can count on this person.	Focuses on the task and what needs to be done some of the time. Other group members must sometimes nag, prod, and remind to keep this person on-task.	Rarely focuses on the task and what needs to be done. Lets others do the work.	
<b>Monitors Group Effectiveness</b>	Routinely monitors the effectiveness of the group, and makes suggestions to make it more effective.	Routinely monitors the effectiveness of the group and works to make the group more effective.	Occasionally monitors the effectiveness of the group and works to make the group more effective.	Rarely monitors the effectiveness of the group and does not work to make it more effective.	