

**Activity: Time for Dinner**

**Grade Level:** Grade 2

**Major Emphasis:** Food Chain

**Major Curriculum Area:** Science

**Related Curriculum Areas:**

Refer to Outdoor Education Curriculum Matrix K-2  
Human Relations



**Program Indicator:**

The student will be able to explain the relationship between plants and animals in the food chain.

**Student Outcomes:** The student will:

1. name animals that need green plants as food, directly or indirectly.
2. act out roles of animals which have feeding relationships.
3. sequence plant and animal names to form a food chain.

**Readiness:**

1. Introduce food chain concepts from the second grade Unified Science Curriculum.
2. Introduce vocabulary:
 

chain	prey
changes	source
habitat	survival
links	decomposers
population	consumer
predator	producer
3. Introduce plant, grasshopper, frog and hawk through picture cards or study prints.
4. Discuss survival problems such as lack of food and the need for safe resting spots.
5. View films available from the Board of Education's Media Services: "Food Chains in the Ocean," 898 and "Animal Predators and the Balance of Nature," 745.
6. View Silver Burdett filmstrip, "Making a Food Web."



**Materials:**

- |                                     |                       |
|-------------------------------------|-----------------------|
| hawk mount                          | whistle               |
| frog mount or puppet                | magic marker          |
| grasshopper puppet                  | 6-10 traffic cones    |
| stopwatch/other timekeeper          | Supplements A, B, C   |
| enlarged tally sheet (Supplement A) | 4-5 liters of popcorn |

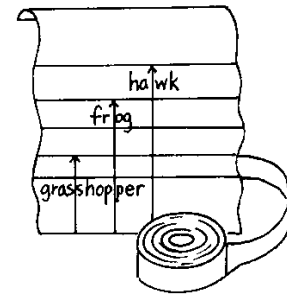
**For Each Animal:**

- sash (1 yd. long, 3-4" wide, different color for each animal)
- stomach pouch (baggie, small paper sack or paper cup)

## Procedures: (DL1,2,3&4)

**This activity works well with a large group.**

1. Ask one student to name something that he or she had for a recent meal. Have the group trace it from the table at home, to the store where it was purchased, to the truck which delivered it, to the factory where it was made, to the farm where a basic ingredient was grown. Relate this as a food chain.
2. Carry over the food chain concept by using graphics and discuss animal roles: grasshopper, frog and hawk. Compare a food chain to a circle that depicts who eats whom in the animal world. Refer to Supplement C.
3. Use cones to establish limits of game area and provide two safe areas (for grasshoppers and frogs). Explain that popcorn will be used to represent plant food for grasshoppers.
4. Review good game behavior:
  - a. Stay in designated boundaries.
  - b. Do not run; possible movements:
    - ! grasshoppers - hop.
    - ! frogs - walk or jump.
    - ! hawks - walk with arms spread out and swooping.
  - c. Stop at "time called."
  - d. Tap "eaten" animal.
  - e. Each animal will have a stomach pouch (bag or cup). When the pouch is full of popcorn, the animal is full and no longer needs to actively get food.
  - f. Designate the safe areas.
  - g. Designate sideline areas where "eaten" animals wait for the next activity.
5. Pass out sashes to the groups of animals. Sashes should be worn so they are plainly visible, either around the arm or waist. For Activity I divide the animals using a 3:2:1 ratio (1/2 grasshoppers, 1/3 frogs, 1/6 hawks).
6. Record starting population of animals on the enlarged tally sheet. Scatter popcorn within the playing area. Give "stomach pouches" to the animals. Define boundaries and safe areas. Each animal can go one time to a safe area and be allowed to rest for ten seconds.
7. Begin the game by sending in the grasshoppers to "eat" the popcorn by gathering it and filling the stomach pouch. One or two minutes later, send in the frogs to "eat" the grasshoppers. Frogs gently tag grasshoppers and the contents of the pouch are transferred. The grasshopper is out of the game and stands by the sidelines. After two more minutes, send in hawks to "eat" frogs. Hawks gently tag frogs and transfer the contents of the stomach pouch. Frog is out of the game and stands by the sidelines. The game ends when time is called or when all of one kind of animal is eaten. *Note that grasshoppers may eat **only** the popcorn (plants) on the ground; frogs may eat **only** the grasshoppers (not the popcorn on the ground); and hawks may eat **only** frogs (not popcorn on the ground or the grasshoppers).*
8. At the end of Activity I, record on the tally sheet the number of each kind of animal that is left in the playing area. Use Supplement B/Activity I questions as a guide for reviewing the game.



9. For Activity II, change the animal ratios (1/4 grasshoppers, 1/2 frogs, 1/4 hawks). Send in hawks before frogs, while grasshoppers are feeding. Send in frogs last. When time is called, record the number of each animal left in the playing area. Use Supplement B/Activity II questions for review.
10. Repeat the game leaving out the group of frogs. Record the number of animals left and use Supplement B/Activity III questions for review.
11. If time permits, continue the game using the variations below:
  - a. Limit the number of animals which can be "eaten."
  - b. Add a pesticide (colored popcorn) which poisons the food. Three kernels might be fatal to grasshoppers; five to frogs; ten to hawks.
  - c. Population explosion of one of the animals.
  - d. Make certain animals poison. If those animals are eaten, the predator(s) go to the sidelines. How did this affect the food chain?

**Summary: (DL2,3)**

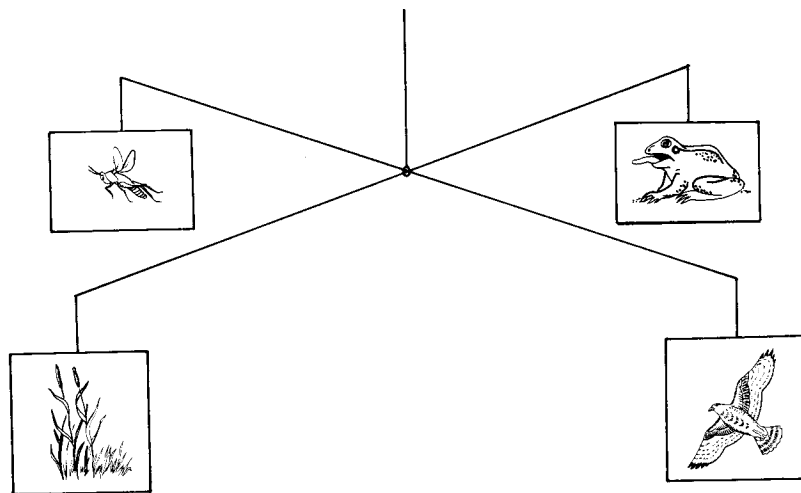
1. Given an animal name, see if you can extend the food chain in both directions.
2. What would happen to the frogs and hawks if insecticide killed all the grasshoppers?

**Follow-Up:**

1. Play "Food Webbing Game" from Sharing Nature with Children, pp. 56-57.
2. Play "Predator" from Sharing Nature with Children, pp. 58-59.
3. Play "Everything is Connected" from Hug a Tree, p. 40.

**Extension Activities: (DL2)**

1. Make a food chain mobile.



2. Find a picture of an animal. Paste it on paper and make a web of things that it would eat.
3. Write a frame paragraph: **Food Chain**

All \_\_\_\_\_ need \_\_\_\_\_ plants. The grasshopper eats \_\_\_\_\_. The frog eats \_\_\_\_\_.  
\_\_\_\_\_ . The hawk eats the \_\_\_\_\_ .

Plants are \_\_\_\_\_ .

### Teacher Resources:

#### Books:

- < \*Hug a Tree, Rockwell, Robert.
- < \*Sharing Nature with Children, Cornell, Joseph. 507.
- < \*Magic School Bus Gets Eaten

#### Filmstrips:

- < "Making a Food Web," Silver Burdett.
- < "Food Chains in the Ocean," 898.
- < "Animal Predators and the Balance of Nature," 745.

#### Study Prints:




- < \*"Wild Animals," BESP-103. SVE.

#### Supplemental Material:

- < \*"Food Chain Game," Outdoor Biology Instructional Strategies (OBIS).



### Tally Sheet

Activity	I		II		III	
	Start	Finish	Start	Finish	Start	Finish
 grass-hoppers						
 frogs						
 hawks						
<b>Total</b>						



## Activity Questions

### Activity I

1. When were the grasshoppers safe?
2. What could happen if an animal was allowed to stay in the safe area an extended (long) amount of time?
3. Did the frogs catch all the grasshoppers before time was called?
4. When the frogs entered the area, how did the grasshoppers attempt to survive?

### Activity II

1. How did the frogs feel when they entered the area and found the hawks already there?
2. How did the number of animals change in Activities I and II?
3. How did these changes affect the animals' survival?

### Activity III

1. What did the hawks have to eat when the frogs were not in the area?
2. With no frogs, what might happen to the grasshopper population?
3. Using your tally sheet, how many "animals" were left in each group?
4. Using your tally sheet, what did you observe about the hawks in all three activities?
5. Total each column in each activity.
  - a. In which activity were the fewest animals left?
  - b. In which activity were the most animals left?

**Food Chain**

