



# Food Web Organization

TOTTEN  
SCIENCE

## Introduction

Ecosystems contain many different types of organisms. Some are known as **autotrophs** or producers, which are capable of converting the energy of the sun (Sunlight) along with water and CO<sub>2</sub> to produce their own food through photosynthesis. **Heterotrophs** rely on autotrophs for energy since they cannot make their own. Some heterotrophs eat only autotrophs (herbivores) while some heterotrophs eat other animals – predators who eat prey. One way to analyze the complex relationships that exist between organisms in an ecosystem is by observing their feeding relationships.

1. List the 8 major ecosystems we will be studying in class. \_\_\_\_\_

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**Goal:** To complete a food chain with 5 links and eventually a food web for your assigned ecosystem. Each chain must contain the following: 1 producer, 1 primary consumer, 1 secondary consumer, 1 tertiary consumer, and either 1 scavenger or 1 decomposer.

## Materials- Per group of 6-7

- Set of habitat cards (Deciduous forest, Freshwater swamp, Tropical rainforest, Desert or Marine)
- Habitat Board (Deciduous forest –green, Swamp- burgundy, Rainforest- red, Desert- gold, Marine- blue)
- Shared: scissors, string, clay

## Procedure

1. Group dealer shuffles and deals 5 cards to each player from the habitat deck assigned. Remainder of cards go face down in middle.
2. First player to dealer's left draws a card from the top of pile & inspect your cards. Try to complete a food chain with 5 links. If you do not have a chain discard 1 card under the pile and play continues to next player.
3. Continue clockwise until one player has made a food chain. You may reshuffle the pile as needed.
4. When a player has succeeded you should inspect the chain to be sure its complete.
5. Keep going and see how many other players can make a chain. All players are responsible for making sure the chain functions
6. When you have made all the possible food chains, place the habitat "board" in the center of the table. The 1<sup>st</sup> player to complete a food chain should place 4 pieces of string between the cards of the organisms in that chain. (Use clay to connect the string to the cards)

Ecosystem \_\_\_\_\_

Your Food Chain

Another food Chain

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**Answer the following questions on separate looseleaf paper and attach to this report**

1. Identify your ecosystem and draw the food web you have constructed. *Make sure the arrows point in the direction of the energy flow: from the organism eaten pointing at the organism doing the eating*
2. What is the ultimate source of energy for most organisms and how is this energy captured so it is useful in a food chain
3. What is a food chain?
4. Give an example of a four step food chain from one of the other ecosystems examined in the class and label its levels of consumers and the producer organism.
5. What always starts off a food chain? What ends it?
6. What is a carnivore?
7. What is an herbivore?
8. What would happen if the food chain or webs had no scavengers or decomposers?
9. For most habitats, which description do you think is most accurate- a food chain or a food web? Explain your answer
10. What is a trophic level? Draw a diagram of your food web showing at least 2 organisms at every level. Use a triangle shape.
11. Based on the food web interactions you just determined, explain why could it be a serious problem if a consumer organism that had no predators was introduced into the system? (This sometimes occurs when non-native organisms are released from captivity.)