

## Relationships Between Organisms: Food Chains, Webs, and Pyramids

Name:

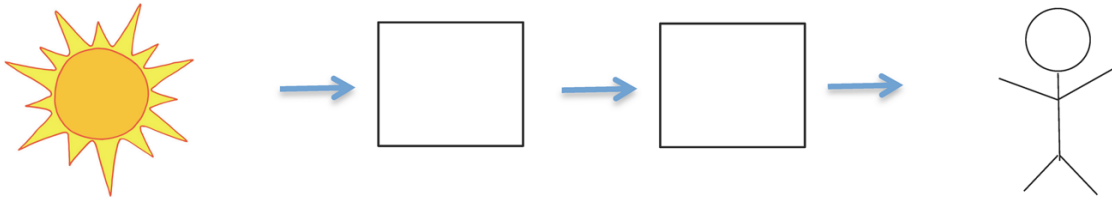
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### Vocabulary Review:

Check your prior knowledge. Before completing this resource, check the boxes of the vocabulary words that you already understand. At the end of the resource come back and check the words you learned. If any boxes are still unchecked go back through the resource make sure you have covered everything.

- Organism
- Ecosystem
- Autotroph
- Producer
- Photosynthesis
- Heterotroph
- Consumer
- Secondary Consumer
- Tertiary Consumer
- Quaternary Consumer
- Carnivore
- Herbivore
- Omnivore
- Decomposer
- Food Chain
- Food Web
- Trophic Level
- Kilocalorie
- Ecological Pyramid
- Pyramid of Energy
- Pyramid of Numbers
- Pyramid of Biomass
- Biodiversity
- Invasive Species

Think about what you ate for breakfast this morning. Can you trace the matter and energy in your breakfast all the way from the sun to you? Draw a food chain to show this movement.



All living things need energy to survive. We need energy to carry out life processes. You need energy to walk, run, or play sports. Birds need energy to fly, and fish need energy to swim. Plants need energy to produce food during photosynthesis. All of these involve the exchange of energy.

**How is energy transferred from one organism to another?**

***Food Web Quick Write***

Write everything you can remember about how food moves through an ecosystem in your science journal with bonus points for drawing a picture. Don't worry if you are not sure about some information being correct.

### Energy, Producers, and Consumers

Terms I didn't get right the first try:

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### Everglades Food Chain

#### Producers

Plants, cyanobacteria and algae. Harness the energy of the Sun, converting it into food energy in the form of sugary compounds

Example: Periphyton



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### Ecosystem Research

Choose one type of ecosystem you are curious about and brainstorm at least three questions to research. Include some of the new terms you have learned in your questions. Use available resources to research and answer your questions. You will use this information later.

**Question 1:** \_\_\_\_\_  
\_\_\_\_\_  
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**Answer:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Source:** \_\_\_\_\_

**Question 2:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Answer:** \_\_\_\_\_  
\_\_\_\_\_  
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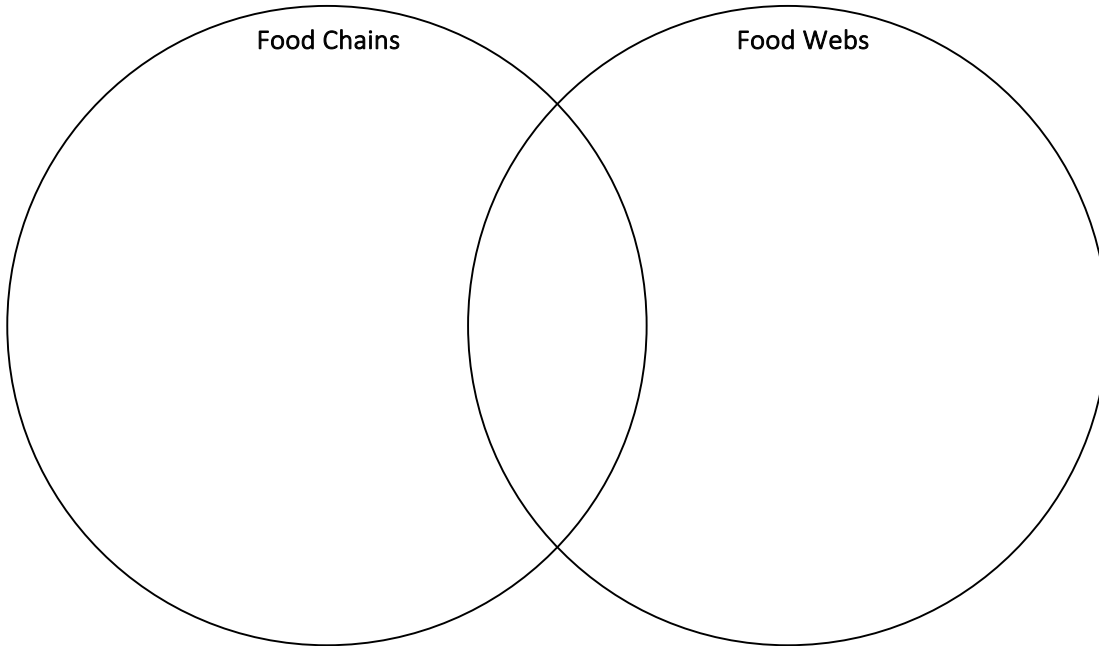
**Source:** \_\_\_\_\_

**Question 3:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Answer:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Source:** \_\_\_\_\_

## Energy Flow in Ecosystems



### Create Your Own Food Web

You can create a rough draft of your food web in this space.

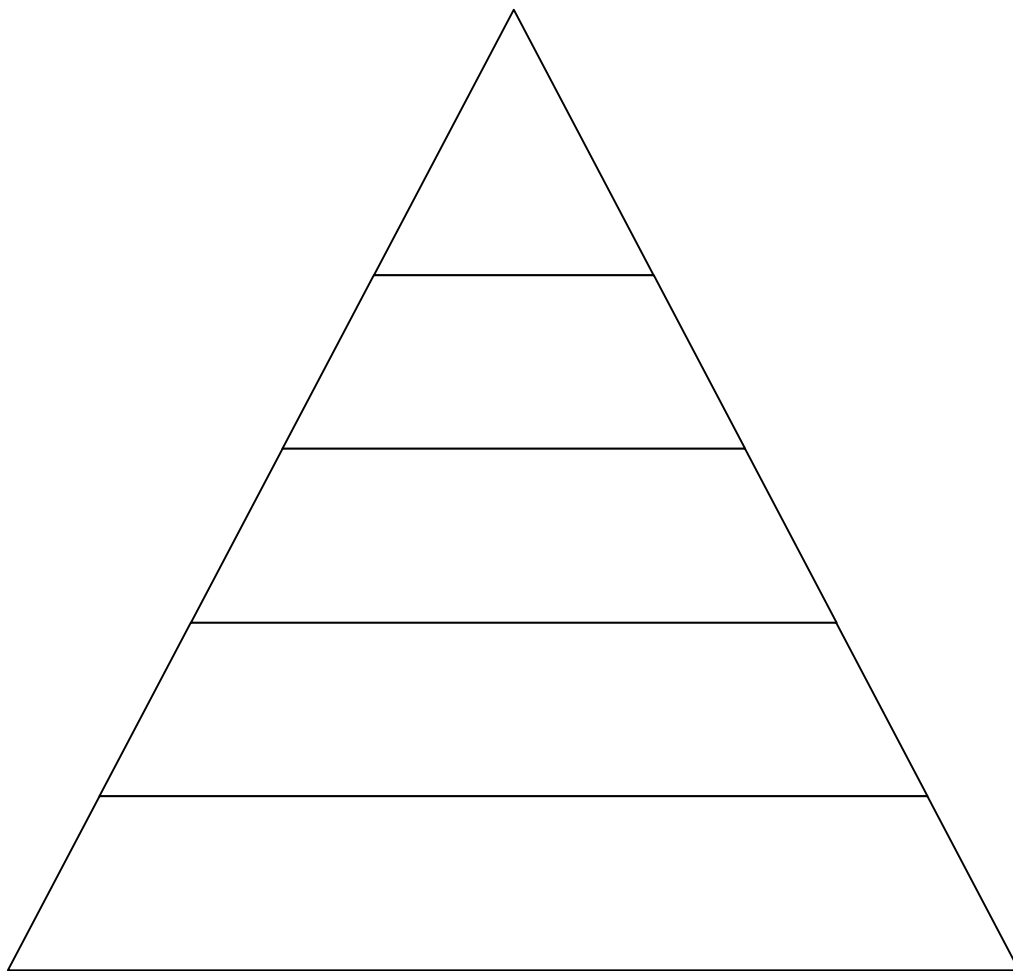
**Trophic Levels**

***My Notes:***

A large, empty rounded rectangular box intended for students to write their notes on the topic of Trophic Levels.

***What I learned***

Refer back to the food web you created at the end of the section. Can you identify producers, first level or primary consumers, secondary consumers, third level or tertiary consumers and fourth level or quaternary consumers within your food web? Use these organisms to complete the ecological pyramid.





**Think About It**

Choose one of the following to respond to:

- Can an organism be on more than one level of an ecological pyramid? Explain your answer. Do you think most fourth level consumers are carnivores, herbivores, or omnivores? Why? What would happen if we didn't have any producers?
  
- Why are fourth level or quaternary consumers important? Why do you think so much energy is lost as we move up the levels?
  
- What might happen when a population of organisms in an ecological system suddenly increases or decreases? Identify an organism in your food web and hypothesize how the ecological system would be affected if this organism was eliminated. What would be the short term and long term effects of this change?

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**Why Does it Matter?**

1. What human activity does the story describe impacting the Everglades?

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2. What were the impacts and consequences of the human activity discussed in the story?

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3. How are ecologists responding to these problems?

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4. What lessons can be learned from this story?

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Ecologists and biologists keep a watchful eye on human activity in threatened ecosystems like the Everglades. Choose a type of ecological pyramid. Respond in your journal to the following prompt:

- How could this pyramid help biologist study and track the balance of matter and energy in an ecosystem? Provide an example.

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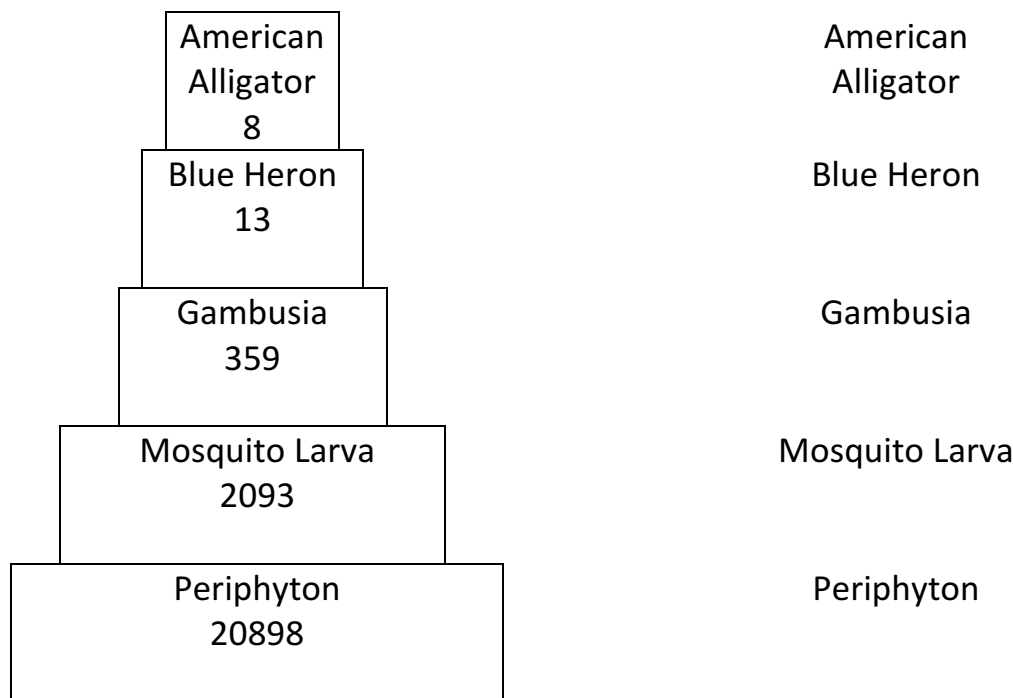
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### Invasive Species

Scientists know pythons are capable of preying on American Alligators, Blue Herons other predators in the Everglades. Imagine what the ecological pyramids of numbers for before and after the Burmese Python was introduced to the wetlands might look like. Hypothesize the numbers a biologist might find when surveying a small area of the wetlands before and after the introduction of the python. Consider the trickle-down effect that occurs when the population of an organisms' predator is decreased. Draw your pyramids in the space below.



Describe some ways this change could impact the organisms native to the ecosystem. How can food webs help scientists study these impacts?

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What are some possible reasons the Burmese Python thrives in the Everglade ecosystem?

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What are some reasons humans are responsible for responding to these problems?

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