



## Sea Turtle Supper

### Food chains of Sea Turtles

#### Essential Question:

- How does the role of sea turtles in the food chain impact the health of marine ecosystems?

**Audience:** Grades 6-8

#### Learning Objective(s):

- Understand the complex interactions between organisms in an ecosystem, specifically sea turtles.
- Understand how learning about food chains and food webs helps conservation efforts of key species.

#### North Carolina Standards:

##### 6th Grade

- LS.6.2- Use models to summarize how energy derived from the sun is used by plants to produce sugars and is transferred to consumers and decomposers.

##### 8th Grade

- LS.8.2.4- Use models to explain how the flow of energy within food webs is interconnected with the cycling of matter.

#### Next Generation Science Standards:

- MS-LS2-2- Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

#### Background Information:

Food chains and food webs are fundamental concepts in ecology that help us understand how energy and nutrients move through ecosystems. A **food chain** is a linear sequence that shows the transfer of energy from one organism to another as they consume each other. For example, a simple food chain might start with plants being eaten by herbivores, which are then preyed upon by carnivores. However, ecosystems are rarely this simple. In reality, they are more like intricate, interconnected **food webs**, where multiple food chains overlap and intersect. This complexity reflects the diverse and interdependent relationships among species within an ecosystem, illustrating the delicate balance that sustains life on Earth. Understanding these concepts is key to appreciating the web of life that surrounds us.



A diverse and interconnected environment can better withstand disturbances like the loss of a species or changes in environmental conditions.

Human activities, such as deforestation, pollution, and overfishing, can disrupt food webs. Removing or altering certain species can have far-reaching consequences for the entire ecosystem.

Studying food webs helps scientists understand the dynamics of ecosystems and how they respond to changes, including natural events and human activities. It also highlights the importance of biodiversity in maintaining the balance and health of our planet's ecosystems. By protecting and preserving the various species and their habitats, we can contribute to the conservation of delicate food web interactions and support the sustainability of life on Earth.

### Vocabulary

- Food chain:
  
- Producer:
  
- Consumer:
  
- Carnivore:
  
- Herbivore:
  
- Omnivore:
  
- Trophic levels-

### Questions

1. What type of events do you think would affect a sea turtle's ecosystem? (i.e. food web event/human activities.)
2. What do you think would happen if these events occurred and why?



## Teacher Answer Sheet - Pre/Post-Content:

### Vocabulary

- **Food chain:** A line-up of who-eats-who in nature. It shows the order of animals and plants where one gets eaten by the next.
- **Producer:** A plant- make their own food from the sun, water and air. They are first in the food chain.
- **Consumer:** An animal- they eat plants or other animals to get their energy. They come after the producers in a food chain.
- **Carnivore:** Animals that eat other animals.
- **Herbivore:** Animals that eat only plants.
- **Omnivore:** Animals that eat both plants and animals.
- **Trophic levels:** hierarchical levels in an ecological food chain or food web, each representing a different position or role of organisms in the flow of energy and nutrients through an ecosystem. There are typically 4 primary trophic levels: producers, Primary consumers, Secondary consumers, and Tertiary consumers.

### Pre-Content Answers

1. What type of events do you think would affect a sea turtle's ecosystem? (i.e. food web event/human activities.)

If one of the organisms in the food web were to go extinct or die off.

Climate Change

Overfishing

2. What do you think would happen if these events occurred and why?

If one of the organisms in the food web were to go extinct or die off, it would change the entire web and potentially kill off other consumers of that organism. Climate change increases the temperatures of the oceans, making organisms migrate north or die off. Overfishing can limit the population of prey.



### Post-Content Extension

1. What did you learn about sea turtles and their diets? How do they all connect?
2. List the foods that you ate last night for dinner.
3. Create a food web using what you ate for dinner.