

Food Chains and Webs Quiz Answer Key PDF

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What is the primary role of producers in a food chain?

- A. Decompose organic material
- C. Produce energy through photosynthesis ✓**
- D. Store energy in the form of fat
- C. Consume other organisms

What percentage of energy is typically transferred from one trophic level to the next?

- A. 1%
- C. 50%
- D. 90%
- C. 10% ✓**

Which of the following is a primary consumer?

- A. Lion
- C. Mushroom
- D. Oak tree
- C. Grasshopper ✓**

How does human activity, such as pollution, impact food chains and webs?

Human activity, such as pollution, impacts food chains and webs by introducing toxins that can harm organisms, disrupt predator-prey relationships, and lead to declines in species populations.

How do decomposers contribute to nutrient cycling in an ecosystem?

Decomposers contribute to nutrient cycling by breaking down dead organisms and waste, releasing essential nutrients back into the soil for use by plants.

Discuss the significance of the 10% rule in energy transfer within an ecosystem.

The 10% rule signifies that when energy is passed from one trophic level to the next in an ecosystem, only approximately 10% of the energy is retained, while the rest is lost primarily through metabolic processes, heat, and waste.

What is the main function of decomposers in an ecosystem?

- A. Produce energy
- C. Break down dead material ✓**
- D. Store nutrients
- C. Consume producers

What is a keystone species?

- A. A species that is the most abundant in an ecosystem
- C. A species that is always at the top of the food chain
- D. A species that only eats plants
- C. A species that has a disproportionate effect on its environment ✓**

Which of the following are components of a food chain? (Select all that apply)

- A. Producers ✓**
- C. Consumers ✓**
- D. Photosynthesis
- C. Decomposer ✓**

What roles do decomposers play in an ecosystem? (Select all that apply)

- A. Breaking down dead organisms ✓**
- C. Producing energy through photosynthesis
- D. Supporting plant growth ✓**
- C. Consuming producers

Which organism is typically at the top of a food chain?

- A. Producer
- C. Secondary consumer
- D. Tertiary consumer ✓**
- C. Primary consumer

Which statements about energy flow in ecosystems are true? (Select all that apply)

- A. Energy flows in one direction ✓**
- C. Energy is recycled within the ecosystem
- D. Energy decreases at each trophic level ✓**
- C. Energy is lost as heat at each trophic level ✓**

Which of the following best describes a food web?

- A. A single linear path of energy flow
- C. A cycle of water through the ecosystem
- D. A diagram showing only producers and consumers
- C. A complex network of interconnected food chains ✓**

Explain the difference between a food chain and a food web.

The main difference is that a food chain represents a single pathway of energy flow, whereas a food web illustrates multiple pathways and interactions among various organisms in an ecosystem.

Which of the following organisms are considered consumers? (Select all that apply)

- A. Grass
- C. Rabbit ✓**
- D. Hawk ✓**
- C. Deer ✓**

Which term describes the increase in toxin concentration as it moves up the food chain?

- A. Biomagnification ✓**
- C. Decomposition

- D. Respiration
- C. Photosynthesis

What are the effects of biomagnification in food webs? (Select all that apply)

- A. Increased toxin levels in top predators ✓**
- C. Decreased biodiversity ✓**
- D. Enhanced growth of producers
- C. Health risks to humans consuming affected species ✓**

What are the potential consequences of removing a top predator from a food web?

The potential consequences of removing a top predator from a food web include increased populations of prey species, which can lead to habitat degradation and a decline in biodiversity.

Describe the role of a keystone species in maintaining ecosystem balance. Provide an example.

A keystone species is one that has a disproportionately large effect on its environment relative to its abundance, such as the sea otter, which maintains kelps by controlling sea urchin populations.

Which factors can disrupt a food web? (Select all that apply)

- A. Habitat destruction ✓**
- C. Stable climate conditions
- D. Pollution ✓**
- C. Overfishing ✓**