CTJan27 Online Year 9 - Food Chains and Food Webs

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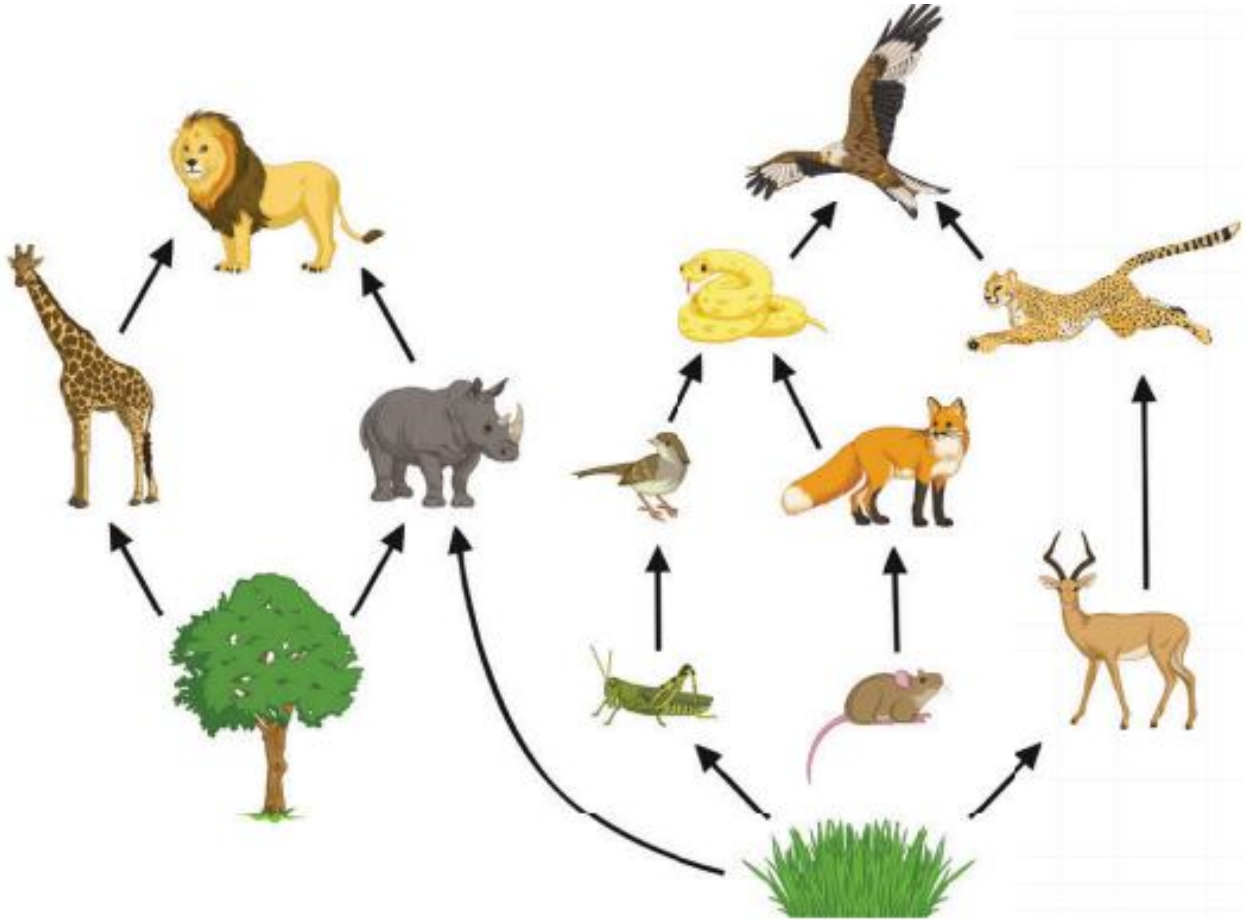
Inspiring Knowledge & Academic Success

Level 1: Remembering



1. What is a food chain? (1 point)

2. Name the three types of consumers mentioned in the text. (1 point)

3. What is the ultimate source of energy in most ecosystems? (1 point)

Level 2: Understanding

4. Explain the difference between a food chain and a food web. (1 point)

5. Why is energy flow considered unidirectional in food chains? (1 point)

6. What role do decomposers play in an ecosystem? (1 point)

Level 3: Applying

7. Given a food chain: Algae → Small Fish → Larger Fish → Seal → Shark, identify the producer and the apex predator. (1 point)

8. How might an ecologist use knowledge of trophic levels to assess the health of an ecosystem? (1 point)

9. Apply the 10% rule to explain why a hawk needs to eat more grasshoppers than a frog does. (1 point)

Level 4: Analyzing

10. Analyze how the removal of primary consumers might affect an ecosystem. (1 point)

11. How do food webs provide a more accurate representation of ecosystem interactions than food chains? (1 point)

12. Compare the energy flow in a food chain versus a food web. (1 point)

Level 5: Evaluating

13. Evaluate the impact of human activities, such as overfishing, on marine food webs. (1 point)

14. Assess the importance of keystone species in maintaining ecosystem stability. (1 point)

15. Critique the effectiveness of using food chains alone to study ecological interactions. (1 point)

Level 6: Creating

16. Design a simple food web based on a terrestrial ecosystem that includes at least five species. (1 point)

17. Construct a conservation plan to protect an endangered species by considering its role in the food web. (1 point)

18. Devise a strategy for teaching the concept of nutrient cycling using a hands-on classroom activity. (1 point)

Level 7: Synthesizing

19. Synthesize the information on energy flow, trophic levels, and human impact to predict the long-term effects of deforestation on a rainforest ecosystem. Provide a specific example. (1 point)

20. Integrate the concepts of food webs, biodiversity, and conservation to propose a global initiative aimed at protecting marine ecosystems. Provide a specific example. (1 point)

21. Synthesize the roles of producers, consumers, and decomposers in an ecosystem and explain how the removal of one of these groups might affect the overall health of the ecosystem. Provide a specific example. (1 point)

22. Combine your knowledge of energy flow and the 10% rule to propose a reason why top predators are often the first to decline in a degraded ecosystem. Illustrate your explanation with a real-world example. (1 point)

23. Synthesize the concept of biodiversity with ecosystem resilience, and explain how the loss of biodiversity might impact an ecosystem's ability to recover from disturbances. Provide an example of such a scenario. (1 point)

24. Synthesize the impact of nutrient cycling and human agricultural practices on soil health, and propose a sustainable farming method that could mitigate negative effects. Include a specific example. (1 point)

25. Question 5: Integrate your understanding of food webs and invasive species to explain how the introduction of a non-native species can disrupt an ecosystem. Provide a real-world example to support your explanation. (1 point)