

Ecosystem Energy Flow Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the primary source of energy for most ecosystems?

undefined. The Moon

undefined. The Sun ✓

undefined. The Ocean

undefined. The Wind

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Which of the following are considered producers in an ecosystem?

undefined. Plants ✓

undefined. Herbivores

undefined. Algae ✓

undefined. Carnivores

Producers in an ecosystem include plants and algae.

Which of the following are considered producers in an ecosystem?

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undefined. B) Herbivores

undefined. C) Algae ✓

undefined. D) Carnivores

Producers in an ecosystem include plants, algae, and some bacteria.

Which of the following are considered producers in an ecosystem?

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undefined. C) Algae ✓

undefined. D) Carnivores

Producers in an ecosystem include plants and algae.

Define the term 'energy flow' in the context of an ecosystem.

Energy flow refers to the transfer of energy from one organism to another within an ecosystem.

Define the term "energy flow" in the context of an ecosystem.

Energy flow refers to the transfer of energy through a food chain or food web in an ecosystem.

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List two examples of decomposers and describe their role in an ecosystem.

1. Example 1: Fungi

Fungi break down dead plant material, returning nutrients to the soil.

2. Example 2: Bacteria

They decompose organic matter, aiding in nutrient cycling.

Decomposers like fungi and bacteria break down dead organic matter, recycling nutrients back into the ecosystem.

Which of the following best describes a primary consumer?

undefined. An organism that eats secondary consumers

undefined. An organism that produces its own food

undefined. An organism that eats producers ✓

undefined. An organism that decomposes organic matter

A primary consumer is an organism that eats producers.

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A primary consumer is an organism that eats producers, such as herbivores.

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Part 2: Application and Analysis

Why is only about 10% of energy transferred from one trophic level to the next?

undefined. Energy is destroyed during transfer

undefined. Energy is lost as heat ✓

undefined. Energy is converted into biomass

undefined. Energy is used for reproduction

Only about 10% of energy is transferred due to energy loss as heat and other processes.

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

A food chain is a linear sequence of energy transfer, while a food web is a complex network of interconnected food chains.

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If a disease drastically reduces the population of primary consumers in an ecosystem, what is the most likely immediate effect on producers?

undefined. Increase in producer population ✓

undefined. Decrease in producer population

undefined. No change in producer population

undefined. Producers will become consumers

The most likely immediate effect on producers would be an increase in their population due to reduced grazing pressure.

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Which scenarios could lead to an increase in secondary consumers?

undefined. Increase in primary consumers ✓

undefined. Decrease in tertiary consumers ✓

undefined. Increase in decomposers

undefined. Decrease in producers

An increase in secondary consumers could occur with an increase in primary consumers or a decrease in tertiary consumers.

Which scenarios could lead to an increase in secondary consumers?

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An increase in secondary consumers could occur due to an increase in primary consumers or a decrease in tertiary consumers.

Apply your understanding of energy flow to predict what might happen if a new predator is introduced into an ecosystem.

Introducing a new predator could disrupt the balance of the ecosystem, potentially leading to a decrease in primary consumers and an increase in producers.

Apply your understanding of energy flow to predict what might happen if a new predator is introduced into an ecosystem.

Introducing a new predator could disrupt the existing food web, potentially leading to a decline in certain populations and an increase in others.

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Introducing a new predator could disrupt the existing food web, potentially leading to declines in certain populations and increases in others.

In a given ecosystem, if the pyramid of numbers is inverted, what might this indicate?

undefined. There are more producers than consumers

undefined. There are more consumers than producers ✓

undefined. Energy flow is efficient

undefined. Decomposers are absent

An inverted pyramid of numbers may indicate that there are more consumers than producers, which can suggest an imbalance in the ecosystem.

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An inverted pyramid of numbers may indicate that there are more consumers than producers, which can suggest an imbalance in the ecosystem.

Analyze the following statements and identify which are true about decomposers:

undefined. They are crucial for nutrient cycling ✓

undefined. They directly consume producers

undefined. They convert organic matter into inorganic substances ✓

undefined. They increase energy flow efficiency

True statements about decomposers include their crucial role in nutrient cycling and their ability to convert organic matter into inorganic substances.

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True statements about decomposers include their crucial role in nutrient cycling and their ability to convert organic matter into inorganic substances.

Analyze the impact of removing a keystone species from a food web. Provide examples to support your analysis.

Removing a keystone species can lead to significant changes in the food web, often resulting in the decline of other species and ecosystem instability.

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Analyze the impact of removing a keystone species from a food web. Provide examples to support your analysis.

Removing a keystone species can lead to significant changes in the food web, often resulting in population declines or increases of other species.

Part 3: Evaluation and Creation

Which strategy would be most effective in restoring energy flow in a disrupted ecosystem?

undefined. Introducing more predators

undefined. Increasing the number of producers ✓

undefined. Removing decomposers

undefined. Reducin sunlight exposure

Increasing the number of producers would be the most effective strategy in restoring energy flow.

Which strategy would be most effective in restoring energy flow in a disrupted ecosystem?

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Increasing the number of producers would be the most effective strategy to restore energy flow in a disrupted ecosystem.

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Increasing the number of producers would be the most effective strategy to restore energy flow.

Evaluate the following actions and determine which could enhance ecosystem stability:

undefined. Protect ing keystone species ✓

undefined. Introducing invasive species

undefined. Reduc ing habitat destruction ✓

undefined. Increasing chemical fertilizers

Actions that could enhance ecosystem stability include protecting keystone species and reducing habitat destruction.

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Actions that could enhance ecosystem stability include protecting keystone species and reducing habitat destruction.

Design a conservation plan that aims to improve energy flow in a degraded ecosystem. Include specific actions and their expected outcomes.

A conservation plan could include actions like reforestation, habitat restoration, and pollution reduction to improve energy flow.

Design a conservation plan that aims to improve energy flow in a degraded ecosystem. Include specific actions and their expected outcomes.

A conservation plan could include actions like reforestation, habitat restoration, and sustainable farming practices to improve energy flow.

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A conservation plan could include actions like reforestation and sustainable farming practices to improve energy flow.